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MUSICALITY: AN INQUIRY BASED ON DABROWSKI'S THEORY OF POSITIVE DISINTEGRATION

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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DEDICATION

To my parents, Isabelle and Rex Hendricks

ABSTRACT

This study is an inquiry into the nature of musical responsiveness or "musicality". It is based on the conceptual framework for human development provided by Kazimierz Dabrowski. The focus is on the experience of the listener rather than on musical performance, composition, criticism or teaching. It is not possible to understand musical responsiveness without taking into account the person who is responding to the music. The response depends not only on the nature of the music, but on the qualities of the perceiver. The quintessence of the concept of musicality that is developed, therefore, is that it construes musicality by the uniting of these two considerations: music and human beings.

One of the primary goals of aesthetic education in music is the development of aesthetic responsiveness to music. Recent literature in the field reflects a demand for attention to the nature of musical responsiveness and its relationship to emotion and human development as well as the need for inquiry at the theoretical level. By approaching the topic from a Dabrowskian perspective, it is possible to develop a concept of musicality which combines these elements. The method used in this study involves a review and synthesis of literature relevant to musicality. This is done in three basic stages. The first stage establishes the concept of musicality which emerges from the psychological and educational literature. The second stage reviews literature from diverse sources and culminates in a broader concept of musicality. The five forms of overexcitability described by Dabrowski--psychomotor, sensual, imaginational, intellectual and emotional--define its basic dimensions. The third stage examines musicality within the developmental framework

provided by Dabrowski. His central conception of the multilevelness of reality forms the basis for a developmental concept of musicality. At this stage the focus is on the development, not of a narrow skill, but on the musicality of a person. Following the third stage is a chapter which illustrates, empirically, how some aspects of the concept of musicality are represented in the experience of several different listeners. The purpose of this chapter is to give examples of some responses, to discuss them in terms of the conceptual orientation developed in this study, and to give concrete examples of methods which might be useful for future research.

In summary, this thesis provides a new perspective on the nature of musical responsiveness. It also directs us toward a more human psychology of music.

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CHAPTER I

THE NATURE OF THE STUDY

> My own music education began...in the fifth grade...when I was identified as the loudest monotone heard at Wilkins School and everything blacked out after that through elementary school... Then something began to develop that I am inclined to think of as natural affinities. Despite the fact that I cannot play an instrument and cannot read music, you have the odd outcome that music is almost the most important thing in my life, next to psychology and to people. If I were to become deaf and I could become selectively deaf, I think I might choose to lose hearing speech and keep music which is very odd. (Roger Brown, 1981)

What is the nature of musical responsiveness? This is the basic question that provides the impetus for this study. It will be an inquiry into the nature of musical responsiveness or "musicality". The focus will be on the experience of the listener rather than on musical performance, composition, criticism or teaching. The study rests on the premise that future research into the area should be based on a much broader conceptualization of musicality than appears to exist at present. I will attempt to provide such a conceptualization by examining and synthesizing literature relevant to musicality from several fields. The organization and synthesis of the literature will be based on the central ideas contained in the large conceptual framework for human development provided by Kazimierz Dabrowski (1977). It is not possible to understand musical responsiveness without taking into account the person who is responding to the music. The response will depend not only on the nature of the music, but on the qualities of the perceiver. The quintessence of the concept to be developed, therefore, is that it construes musicality by the uniting of these two considerations: music and human beings.

Statement of Purpose

The purpose of the study is to provide a broad concept of musicality. It will be a psychological description based on an inquiry into the nature of musical responsiveness.

A second purpose of the study is to demonstrate the value of Dabrowski's theory as a framework for investigating the problem of musicality.

Need for the Study

During the last decade the music education profession has entered a new phase marked by the emergence of the concept of music education as "aesthetic education". Its fundamental aim is the development of aesthetic sensitivity to music or musical responsiveness. The term "aesthetic" appears repeatedly in the pedagogical literature and curriculum guides. For example, in the new Alberta Curriculum Guide for Elementary Music (1977) the first objective listed is "to help children develop an awareness and sensitivity to the aesthetic aspects of music in our culture" (p. 1). Similarly, the Alberta Curriculum Guide for Secondary School Music (1971) includes "aesthetic sensitivity" and "communication through music" in its statement of goals (p. 1). Added to these basic goals are objectives in the areas of knowledge, musical understanding, cognitive and music skills (playing, listening, moving, creating, and reading music). These more secondary goals are regarded as means of accomplishing the primary goal of aesthetic sensitivity.

Tellstrom (1971), who examines the profession from an historical perspective, has this to say about the basic aim of contemporary music education: "Spokesmen for the field seem generally agreed that the aim of music education centers upon the development of musicality or musical responsiveness" (p. 255).

Accompanying the recent emphasis on aesthetic education has been an increased interest in what constitutes aesthetic experience and a growing realization that we need to know more about the nature of responsiveness to music and to the arts in general. In June of 1976, a symposium entitled "Arts and Aesthetics: An Agenda for the Future" was held for the purpose of constructing an agenda for research in arts and education. Among the topics listed for future research were: (1) the nature of aesthetic experience, (2) aesthetic responsiveness, and (3) the need for theory constructions (Madeja, 1977, p. 10). Questions regarding aesthetic development were also raised.

> Answers are needed to such questions as: Are there structural properties of aesthetic development and can they be discerned? Does aesthetic development relate to any existing developmental theories? (p. 18). Are there developmental stages in adult aesthetic learning that are comparable to those of children? What are the affective stages of growth that parallel Piaget's cognitive stages? (p. 13). What are the developmental patterns (stages) of human growth in aesthetic sensibilities? (p. 9)

There was also general agreement that more attention should be given to these problems at the theoretical level:

> While there is a need for applied and practical studies relating to the teaching of arts at every level, there is still a critical shortage of the scholarly inquiry, that, over time, provides the theoretical voice for the field (p. 15). We need inquiries in human experiencing and the "aesthetic" (generated toward theory building - construct or synthesis - a scholarly eclecticism). (p. 11)

In preparation for this symposium Leonard and Colwell (1977) conducted a review of research literature in music education and formulated a list of research questions which need attention in the area of music. All of the questions were concerned with the nature of musical responsiveness and perception and the means of developing them. Among the first questions listed were these two: (1) "What constitutes aesthetic responsiveness to music?" and (2) "What is the basis for aesthetic responsiveness to music?" (p. 99). They too raise the issue of development and list these two questions for research: (1)"What is the influence of maturation on the development of musical responsiveness and perception?" and (2)"To what extent can a growth gradient be established for the development of musical responsiveness and perception?"(p. 100). These authors emphasize the need for theory and for basic research on the nature of musical responsiveness the results of which may later be applied to teaching and learning.

Since, for many years, there have been psychologists interested in studying the experience of music, the fields of psychology and music education have been associated with each other in various ways for several decades. The theories and research results of psychologists have had considerable impact on music education and much of the research done by music educators is psychological in nature. Recently there has been an intensification of this relationship in the form of two meetings known as the Ann Arbor Symposium, in which twenty-four distinguished music educators and psychologists were assembled. The symposium was entitled "National Symposium on the Applications of Psychology to the Teaching and Learning of Music". At the first session, twelve music educators presented papers to psychologists and in the second session twelve psychologists presented papers to an audience of music educators. The issues raised by some of these scholars highlight the need for increased attention to musicality and the need to broaden the scope of research. Kneiter (1981) for example, states that "we need to broaden our horizons to include more information from personality theory, child psychology, and creativity" (p. 76). Zimmerman (1981) believes that:

> We still need developmental studies in music that focus on the sequential changes in the psychological structure of the individual as he interacts with music. These changes, according to the developmental viewpoint, are mediated by quite different processes at different ages. Developmental psychology can and should be the foundation of life-span developmental research in musicality. (p. 50)

Bennett Reimer (1981), who was disturbed by the lack of attention to the matter of "musical affective sensitivity" raised this important issue:

> Surely, the psychology of human growth and development can give us some glimmers of how children--and adults--progress in emotional sensitivity in openness to new and challenging needs for expressive behavior skills, needs for emotional satisfaction of the component of self-acceptance, and empathy and integration of the personality. Have psychologists anything to tell us about such matters? We would welcome such information and we could, I'm sure, offer a great deal in return in ways to study how music sensitivity might contribute to general emotional sensitivity. (p. 140)

I believe that psychology does have something significant to offer in the area of human development and how individuals progress in emotional sensitivity. This is why Dabrowski's theory is being used as a theoretical framework for this thesis.

In general, recent literature in the field of music education reflects a demand for attention to the nature of musical responsiveness and its relationship to emotion and to human development, as well as the need for inquiry at the theoretical level. In this thesis, I attempt to develop a concept of musicality which combines these elements--musical responsiveness, emotion and human development--and thus to provide a conceptual orientation within which it should be possible to approach a number of research questions.

Overview of the Study

Since the present study is conceptual in nature, its format differs from that which is normally used in reporting empirical research. The organization of the various chapters is based, in part, on Dabrowski's theory. For this reason, an outline of these chapters will be given at the end of Chapter Two, which provides a description of his theory. The following is an overview of the general approach to be used in this study, and a discussion of the rationale underlying the approach.

General Overview

My goal in this study is to provide a concept of musicality quite different from one which would emerge from examining the literature on musical responsiveness alone. This will be done by first describing the concept which does emerge from a review of psychological literature, and then by approaching the problem from Dabrowski's perspective which differs markedly from the usual psychological approaches to the study of musical experience. The final result will be a conceptual orientation which can be used to view some of the issues involved in trying to understand musicality and in attempting to discern growth in musical responsiveness.

An adequate account of musicality requires an examination and organization of research and concepts from several fields--especially psychology and music education. The various chapters in this study will review the literature in three basic stages. The first stage will establish what appears to be the existing concept of musicality based on the psychological and to some extent the educational literature. The second stage will review literature from diverse sources and will culminate in the broader concept of musicality based on part of Dabrowski's theory. The third stage examines musicality within the developmental framework provided by Dabrowski. At this stage the focus is on the development, not of a narrow skill, but on the musicality of a person. Following the third stage is a chapter which illustrates, empirically, how some aspects of the concept of musicality are represented in the experience of different listeners. This chapter is not intended to provide strict verification of the propositions contained in the thesis, but to give examples of musical responses of a small number of listeners, to interpret these responses according to the concept of musicality developed in this study, and to discuss the approaches I use in terms of their possibilities as methods for research. The chapter concludes with suggestions for future research.

Rationale

There are advantages and disadvantages to the use of theoretical frameworks. One disadvantage is that a theory can bias the investigator resulting in a failure to consider other possibilities. A second disadvantage is that research data and other concepts are viewed and interpreted in terms of that theory. More than one theoretical construction can be placed on a set of data. The advantage of theory is that it organizes empirical knowledge into a coherent, meaningful structure. It integrates what is known and suggests steps for future research. Typically, a researcher can think of many experiments or other studies that could be done and the question becomes one of which experiment to do next. Theory can provide the answer to that question.

There are several reasons for my decision to adopt a theoretical framework for the present study. First, many questions are being raised about the nature of musical responsiveness and yet there exists a vast literature, extending back one hundred years, which is related either directly or indirectly to this problem. Some of this literature is part of the current mainstream of research, but there are other studies, theories and ideas which are more isolated or, because they were published earlier in the century, seem to me, to represent a "forgotten literature". Certain studies, as well as the ideas of some writers will be selected for emphasis in the present study regardless of when they were published because, in my view, they contribute to an understanding of musical experience. However many of these concepts and ideas are scattered throughout the literature. It would be advantageous to collect and compare these studies and to formulate some questions. That is part of the purpose of this thesis. Theory enables one to organize isolated bits of empirical data into a more general conceptual system. Dabrowski's developmental view facilitates the grouping together of disparate findings and highlights many phenomena that were previously ignored. A new theory allows one to see existing data in a new way--to interpret the data differently. However, in an effort to avoid the premature imposition of theory onto data, I review a substantial portion of the literature outside of Dabrowski's framework. Although his theory is described in Chapter Two, the three chapters which follow are organized topically. In these chapters I attempt to preserve the context and convey the essence of certain research orientations. Main currents of thought are identified and representative studies are included. Not until Chapter Six do I begin to explore literature within

Dabrowski's framework. Rather than constructing a concept of musicality directly from theory I am committed to remaining "close to the descriptive ground" throughout. Certain ideas from the existing literature will be incorporated into the broad concept of musicality.

The second reason for exploring musicality within Dabrowski's framework is much more fundamental and far-reaching than the first. His theory provides the means for conceptualizing the growth of human functioning from its lowest to highest levels. The primary goals of music education are consistent with a humanistic view of man, but behaviorism is a much more pervasive influence. Charles Leonard (1978) refers to "the strong bid of the behaviorists to take over the world of research in education" (p. 211). There seems to be general agreement that the view of psychology known as "third force" has particular relevance for aesthetic education. Psychologists of the third force (the other two forces being Behaviorism and Freudian psychology) are concerned with deepening our understanding of human behavior when it is distinctly "human" and because they believe that tension-reduction theories cannot adequately explain human behavior, they posit the tendency of the human species to seek growth and self-actualization. The statements of humanistic psychologists are often quoted by music educators. Speaking of Maslow and Rogers, Reimer (1981) states that they "profoundly touch us by their assurance that what we do is not just important: it is essential" (p. 140). Kneiter (1981) refers to the present as the "age of psychology" and adds that "We are dedicated to understanding human nature with greater sophistication" (p. 68). Kneiter discusses the contributions of humanistic psychologists and suggests that our approach to research in music needs some reflection:

> We have often kneeled to the graven image of tight experimental design with elaborate statistical manipulation only to find that we are testing a hypothesis that is at best pedestrian... We need to become relevant for our profession. What I am suggesting is risky. What models should we use? How do we interpret human behavior when numbers cannot always be used as symbols? (p. 76)

Reimer (1981) agrees that we need to expand traditional approaches to research in music:

> Yet because of the constraints of our research methodologies we have found ourselves dealing with those small parts of behavior capable of fitting our designs. We need to know of molar methodology; of ways to probe and clarify the staggering density of experience when children and art interact authentically; of ways which do not obscure and deaden the experience we are trying to understand. We need...more than just a little help from psychologists. (p. 141)

At the recent Ann Arbor Symposium, humanistic psychologists were referred to as "inspirational psychologists". Dowling (1981) said that experimental psychologists and probably music educators use Maslow and Rogers "for a kind of inspirational reading that feeds into what we do. But that is not very specific about exactly what to do". Dowling said that these psychologists are very useful but added, "Inspirational psychologists sort of sit in a world apart from the world in which we do most of our experiments" (p. 77). Shepard (1981), also referring to the contributions of "inspirational" psychologists asked this question:

> How might we begin to bridge the gap between the truly significant issues, which we so far apprehend only vaguely in terms of purely verbal generalities, and the precision of formulation and prediction that we strive for in the laboratory but in, at best, a "pedestrian" way in the absence of sufficiently deep conceptualization of the significant issues? This gap does not, of course, coincide with the boundary between music education and psychology. In both fields we seem to enjoy an abundance of grandiose but untestable theories and of quantitative but inconsequential results. (p. 80)

Dabrowski's theory is a "grand" theory, but it does identify parameters for empirical testing, it does offer a deep conceptualization of truly significant issues and it does, in my view, offer a way to begin to "bridge the gap" between behavioristic and "inspirational" psychologies. Marlene Rankel (Note 1) suggests that the "humanists are sometimes as guilty of ignoring the biological component as are the behaviorists of ignoring the spiritual component in man" (p. 2). Referring to Dabrowski's theory she states:

> How does the Theory of Positive Disintegration differ, in essence, from other psychological theories? It is, in my opinion, the Theory of Relativity applied to the field of psychology. To me, it subsumes other theories, offering the broadest and deepest view to date on the understanding of human nature. (p. 3)

In this study, using Dabrowski's framework I will give attention both to the "biological" and the "spiritual" component of the human being.

Often a distinction is made between molar and molecular methodologies or between grand theories (e.g. Freud) and miniature theories (e.g. conditioning). Theories are sometimes discussed in terms of their "deployability" which refers to the extent that they can be applied in a new context. Dabrowski's theory is a grand theory because it refers to a wide range of phenomena. In my view, his theory has sufficient scope and deployability to be valuable as a framework within which to approach the problem of aesthetic responsiveness to music. Since an account of musicality involves literature from several disciplines and subdisciplines, and since Dabrowski's theory itself touches on several fields, there will be a certain amount of alternating back and forth between different topics during the course of this thesis. For example, it will be necessary to discuss matters pertaining to music, to aesthetics, to development, to emotion, and so on. The study will involve what might be called a "molar" approach to the research literature, much of which includes studies which are, in themselves, molecular. None of these research approaches or lines of inquiry will really be considered in depth. In addition to what might be regarded as an "holistic" review of "reductionistic" research I include some basic positions from the field of aesthetics, but again, no aesthetic theories are described in depth. With regard to the research literature, methodological and other criticisms are attenuated so that the presentation does not collapse into a series of qualifications. This general approach is being used because of the wide scope of research reviewed. It is my intention to identify major currents of thought and research trends to provide a context for and also to provide content for the concept of musicality to be developed.

Major Assumptions

The major assumption is that research and theory from the various sources and disciplines can be related not only to each other but to Dabrowski's theory without distorting the basic positions that are considered.

The second major assumption concerns the empirical chapter. It is assumed that a normal listening situation can serve as a basis for considering the nature of musicality. In other words the information will not be gathered under the controlled conditions of the laboratory but either in a classroom or home setting. Such a situation will be one in which the listener is attending to the music rather than simply using it as a background for other activities. Further, it is assumed that a situation can be created in which the listener feels free to reveal his true reactions to the music.

Major Limitations

This study will be limited by the fact that it is conceptual in nature and does not rely on empirical evidence for support.

A second limitation is that the various research studies and theoretical positions that are considered will be divorced from their contexts and to some extent from the particular problems they were intended to address.

A third limitation is that the concept of musicality will be constructed on the basis of the areas mentioned earlier. Therefore, the study will be limited by the content of the literature chosen, and by the exclusion of other literature which, if included, might lead to a different synthesis than the one that will be developed. For example, a vast amount of material in the domain of philosophical aesthetics will be excluded since the study is intended to be primarily psychological rather than philosophical.

A fourth limitation is the focus on musicality to the exclusion of any systematic consideration of its relationship to responsiveness to the other arts. Furthermore, although the use of the term "aesthetic" is necessary, there will be no attempt to deal with traditional issues in the field of aesthetics nor will there be any attempt to analyze musical compositions in terms of aesthetic merit.

A fifth limitation is that there will be no attention given to music with words. To my knowledge, this has not been studied to any extent since music is generally considered to be a form of nonverbal communication. "It is the wordless meaning of music that provides its potency and value" (Gaston, 1968, p. 23).

Definitions of Major Terms

Because of the nature of this study, I will not attempt to make too many fine distinctions among terms. I intend to use words in the service of ideas and hope to avoid, as much as possible, the many semantic difficulties often involved in discussions concerning the aesthetic realm. I feel that attempting to define too many terms would seriously impede the writing of this thesis. However, there are two basic terms that should be discussed at this point. One is "musicality" and the other is the word "aesthetic".

Musicality

For purposes of this study, "musicality" will be defined as "the capacity for musical responsiveness". It refers to the ability of a person to respond to music rather than his ability to perform or create music. The term "musicality" reflects the focus on this inquiry which is on characteristics of the person rather than on the music itself.

The term "musicality" was defined by Schoen (1940) as the "capacity for musical reception" (p. 151). He distinguished it from "talent" which he defined as the capacity for performance. In other words, a person may be very "musical" in that he has considerable sensitivity for, feeling for, or appreciation of music without having the ability to perform (Lundin, 1967, p. 204).

In the literature, the terms "musicality", "musical talent", "musical aptitude", "musical ability", and "musical capacity" are often used interchangeably. Because of the imprecise usage of these various terms, Radocy and Boyle (1979, p. 263) suggest several distinctions. They define "capacity" as that portion of musical ability which is the result of genetic endowment and maturation. "Aptitude" would include "capacity" plus the result of environmental influences other than formal music education. "Ability", then, would be the broadest term defined as what a person is able to do musically as a result of capacity, environmental influences and formal instruction. "Talent" implies something more than ability, for fewer people have talent. It implies an obvious indication of superior ability--usually in performance. They suggest that "musicality" refers to a state of being "musical" that is, sensitive to changes in a musical stimulus. In performance it might mean a tendency to "taper phrases and vary dynamic levels without the teacher's direction". For purposes of the present study, these distinctions will serve as a starting point. During the course of the study, the particular meanings attached to these terms by different authors will be pointed out where necessary. In the chapters which review the psychological literature, I will use terms as the authors used them to avoid too many awkward qualifications. The meaning should be clear from the context. However, at the end of each of these chapters, there is a discussion of implications of the literature for musicality. In these discussions the term is intended to mean "capacity for musical responsiveness".

Aestheti c

Another term which would seem to need a clear definition is "aesthetic". The difficulty in attempting to define this term is that various philosophers, theorists, and other writers have defined it in many different ways. It is appropriate at the outset of this study, to avoid adopting any particular definition since, in a sense, this study will be an exploration of several different views of aesthetic responsiveness. Explicit definitions of this and related terms will be given when such clarification becomes necessary. To illustrate the difficulty involved in arriving at a definition, a brief explanation is given below.

In 1967, when the aesthetic education movement was beginning, Schwadron (1967) noted that "it is often surprising for both the musician and the layman to learn that aesthetics is related to general philosophy, that the theoretical problems in aesthetics draw substantially from philosophy in logical procedures as well as terminology" (p. 3). Philosophical theories of art and beauty have been a part of Western culture since the time of Plato. During the long tortuous history of aesthetics, hundreds of views have been expressed. Theoretical disputes are often entangled in semantic difficulties. Radocy and Boyle (1979) state that the range and diversity of these views have "resulted in a philosophical quagmire which often engulfs those who are not well schooled in aesthetics" (p. 203). They summarize some basic views to illuminate the dilemma philosophical aesthetics holds for the uninitiated. Art has been defined as: an imitation of the ideal--the beautiful and the good (Plato); an imitation of the fundamentally real (Aristotle); an expression (Rousseau); the most divine form of play (Shiller); a reflection of tension-release patterns of everyday life (Dewey); empathy (Lipps); and as communication (Tolstoy). Schwadron (1967) also summarizes several theories as follows:

> Croce, spiritual intuition; Maritain, moral intuition; Freud, desire and the unconscious; Santayana, reason; Langer, symbolic transformation; Garvin, feeling response; Stravinsky, speculative volition; Schoenberg, logical clarity; Leichtentritt, logical imagination; and Hindemith, symbolic craftsmanship. (p. 33)

This list is far from inclusive. When aesthetic views are summarized in this way the presentation sounds almost like satire, but each expression in the quotation above represents an elaborate and carefully wrought theory. Many of these theories are primarily concerned with the non-musical arts and can not easily be applied to music or which apply only indirectly. Smith (1979) points out that in musical aesthetics words such as "form" and "musical materials" are borrowed wholesale from the visual arts or from classical philosophy. Apel, in the Harvard Dictionary of Music, states that beauty is not the only, and perhaps not even the foremost criterion for judging the quality of music, unless we define beauty so broadly that it includes features "which may well be closer to its opposite". Apel defines musical aesthetics as "the study of the relationship of music to the human senses and intellect" (p. 17).

What is an aesthetic experience? It is usually regarded as one in which the individual attends to the qualitative as opposed to the practical aspect of an object. The experience leads to no practical action or knowledge of a scientific nature. It adds a dimension of quality and is complete and fulfilling in itself. Beyond this general statement, different aestheticians would give different answers depending upon their theoretical preferences. The view which appears to be having the greatest influence on music education is that of Bennett Reimer. It is outlined in the next section of this chapter. Normally, psychologists do not attempt to resolve aesthetic disputes. They investigate musical responses without getting involved in a struggle for a precise definition of "aesthetic".

The difference between the meanings of the terms "musicality" and "aesthetic sensitivity" is explained by Kneiter (1981b):

> Musicality is the specific name which describes our capacity to respond to music. The term "aesthetic sensitivity" is the general term which describes our capacity to respond to all of the arts. (p. 14)

Background to the Problem

This study is being conducted because of my underlying concern about certain aspects of current trends in music education in North America. The view of musical experience expressed by some prominent music educators is overly narrow and can lead to classroom practice based on a one-sided notion of what is to count as a "legitimate" musical response. This view arises, in part, from the particular psychological orientation that underlies educational practice. For this reason, the psychological literature will be reviewed in this study and the resulting concept of musicality will be described. However, a brief history of music education on this continent will help to identify other influences which give rise to this "one-sided" view and will also give some perspective to the problem.

Prince (1974), who outlines developments in music during this century, indicates that in the early years of school music, the main objective was to teach students how to read music and sing well. As the profession matured, instrumental music was added with a view to developing bands, orchestras, and choruses of significant musical merit. Soon contests, festivals, and adjudication developed. Repertoire items for concerts, festivals, and other events became the annual products for performance classes. This "product-oriented" performance group movement had a significant and enduring effect on music education.

Something of a dichotomy emerged in the field which began with the influence of music psychologist James Mursell during the 1930's. He believed children should become involved in a variety of musical activities (singing, listening, playing, moving, and creating) in order to discover and experience the "essence" of music. His intention was that these processes should be experienced repeatedly in a cyclical format in which experiences should become increasingly complex both from a technical and conceptual standpoint. Mursell (1948) believed that "musical growth, like all mental growth is a process in which essential means are clarified, deepened and broadened" (p. 50). Mursell's (1956) basic aims for music education-- (1) enjoyment, (2) experiences of success, (3) social development, (4) self discipline, and (5) extension of cultural horizons--continued to appear in methods texts and curriculum guides until the early 1960's. The activity-based curriculum was consistent with the "progressive" educational emphasis at the time. Unfortunately, Mursell's ideas were not always well understood or well implemented. Often activities were used because they were "fun" or kept students busy with little attention to their educational potential. These activities tended to become stereotyped losing their power to motivate students.

In the years following Russia's launching of Sputnik, music education reflected the broader trend in education toward a return to academic rigor in all subjects of the curriculum. The importance of a genuine understanding of the nature of the major disciplines of knowledge was emphasized as was teaching according to the structure of the discipline.

The structure of music is complex and is fundamentally involved with the elements of music--melody, rhythm, harmony, tempo, dynamics, texture, style, and formal organization. The topic of the 1964 Music Educators National Convention was "Music: An Academic Discipline". Conceptual development in music was given high priority in the post-Sputnik years. The danger in this approach is that it can become overly academic with too much emphasis on intellectual skills without regard for other dimensions of musical experience.

Finally, during the late 1960's and early 1970's the concept of "aesthetic education" emerged. This is a sound-based approach which involves the student directly in the music (playing, creating, singing, listening) for the purpose of developing aesthetic sensitivity and musical understanding. The musical or aesthetic experience is of central importance and the study of music in any form is regarded as a means to this end. Many types and styles of music are included in the curriculum--popular, classical, folk, rock, electronic, and music from other cultures. Accompanying this concept of music education has been an increased interest in the "general" music program.

The general music class, unlike the performance class, can concentrate on activities designed specifically to develop musical responsiveness. The performance class serves only a small number of children and few become professional musicians or enter a music vocation. The general music class is the vehicle through which the majority can become involved in music education. Schwadron (1967) states that "The most immediate needs of our society are consumer-oriented" (p. 67). Most people in our culture encounter music primarily through listening and listening itself underlies all other music activities. Recognition of this fact coupled with the emphasis on teaching according to the "structure of the subject" has led to a focus on the development of musical perception as the "single most important behavior in the field" (Reimer, 1976, p. 25). Students are taught to focus their attention on the elements of music to develop perceptual skills with the ultimate goal of musical sensitivity.

At the beginning of this section I stated that I had some concerns about current trends in music education. Now I will give some examples. One has to do with the pervasive influence of behaviorism. The most important goals for music education are consistent with humanistic views. Articles in the literature and curriculum guides often contain phrases like "creativity", "self-actualization" and "peak experiences". However, the influence of behaviorism is strong. This is evident in both the pedagogical and research literature. Leonard and House (1977) in their review of research in music state that "Although Skinner has not been, as such, the subject of much music education research, his ideas have found wide applicability with the behaviorists, who represent a large and influential segment in music education" (p. 97). In terms of teaching and learning, specific behaviors are expected as products of classroom procedures. Prince (1974) believes that an emphasis on product-oriented music education is gaining force because of these pressures:

> Outside pressures result from the popularity that the behavioral objectives movement has gained in many other instructional fields and from the attitudes of administrators who have embraced this movement. The movement toward a national assessment program and the ascendancy of the notion of accountability are signs of this success. Pressures from within have stemmed primarily from researchers in music education who have been concerned with the identification of measurable objectives as focal points for research and of evaluation of music instruction in the schools. (p. 30)

I agree with Kneiter (1981b), who states that the music profession has become overly dependent on behaviorism which can be seen in: "(1) excessive testing; (2) concern with accountability; and (3) an attempt to reduce both student and teacher behavior to the simplest of terms" (p. 11). He points out that we are committed to improving the human condition through music but, during the last fifteen years, we have spent an inordinate amount of time considering topics such as behavioral objectives, accountability, competencies, mainstreaming, Suzuki, Orff, Kodaly, behavior modification, testing, whether to teach reading in elementary schools, rehearsal procedures, and classroom management in general music. These and similar topics have occupied the major thrust of our professional discourse instead of music as aesthetic education which "primarily involves the cultivation of musicality" (p. 10).

Bennett Reimer (1970) a well-known proponent of aesthetic education has made a significant contribution to the improvement of general music through his book A Philosophy for Music Education in which he undertook the difficult task of examining some of the scholarly work in philosophical aesthetics and from them constructing a philosophical position for music education. He then carried out a further translation through publications which provide methods for putting this philosophy into practice in the classroom. The philosophical underpinnings of his ideas will not be given at this point but since he is one of the most influential educators on the continent, I will return to many of his ideas during the course of this study. Reimer (1971) writes about the danger of behaviorism and how it can trivialize the study of music. In his view one of the weaknesses in behavioral objectives "is the indiscriminateness of such objectives in determining value" (p. 71). He also states that the "gravitation of educational measurement toward lower order behaviors will determine what is taught and how it is taught" (p. 71). However he believes that these dangers, although real, are not necessary. We can use behaviorism in any way that suits our purposes "without falling into the trap of neglecting the subjective in favor of the objective". His view of aesthetic experience is important because of its impact on music education. Reimer (1971) provides a summary of the aesthetic experience in terms of seven "aesthetic behavior categories". Four of these behaviors--producing, conceptualizing, analyzing and evaluating are what he calls "means" behaviors. Two of the behaviors--perceiving and reacting--are called "ends" behaviors. The final behavior--valuing--is an "outcome" behavior. The central aspect of the experience is the perceiving and reacting. Perceiving, includes many sub-behaviors such as discriminating, recognizing, noticing, discerning, matching, differentiating, observing, recalling, relating, comparing, anticipating, distinguishing and other similar behaviors. Reimer (1970) states that these components of aesthetic perception can be manipulated, discussed, practiced and tested. "In short, they can be taught" (p. 81). However, in his view, we cannot teach directly for aesthetic reaction which is totally subjective and consists of behaviors such as feeling, undergoing, responding and being moved.

The emphasis on perception in music is based on the premise that an individual cannot respond to something unless it is first perceived. This seems logical, but here we come to the heart of my concern. I believe this emphasis leads to a number of problems, including what I consider to be a one-sided concept of musicality. In this study I will describe this concept and some of the educational implications, or what I consider to be "problems" associated with this concept. I believe we need a broader, more multifaceted concept of musicality.

Another of my concerns has to do with emotion. There is a widely recognized relationship between music and emotion, and most educators who write about musical responsiveness consider feeling to enter into the aesthetic response (Kneiter, 1971; Reimer, 1970; Schwadron, 1967). However, there is an attitude of reluctance on the part of many music educators to deal with this in teaching and research. There could be several reasons for this. First is the old notion that a response to music which is "merely" emotional is inferior. Many writers refer to the emotional response as the lowest level of response. A second reason for this reluctance has to do with the unsuccessful attempts by some music educators during the 1950's to have students translate music into feelings--"efforts that did little to advance either music education or the reputation of its practitioners" (Murphy, 1980, p. S-27). This attitude was revealed at the recent Ann Arbor Symposium. The paper by Roger Brown was the only one which focused on music and emotion. A long and controversial exchange followed Brown's paper. The report on this conference states that "It became clear that Brown, in his experimental use of emotional terms, had inadvertently touched a sore nerve in the corpus of music education" (Murphy, 1980, p. S-27). Murphy reports that Heller, who gave the response to the paper, tried to convey some of the history and traditions in music education including the statement that:

> the attempt to link music to emotional expressiveness was a dead duck, "a caricature that has limited the range of research in music", a discredited sentimentalism that music educators have long since outgrown. (p. S-21)

A third difficulty surrounding the matter of musical responsiveness and emotion is the lack of a conceptual framework or theory. Howard

Gardner (1977a), a developmental psychologist interested in aesthetic development, notes that some areas of research have been neglected. He states: "For instance the phenomenological experience of the individual involved in the arts is clearly crucial, but we know of no way of studying it. An individual's affective responses are also crucial but we are equally ignorant of how to study affect" (p. 274).

The importance of emotion is stressed by Dabrowski who addresses the problem directly and provides a much needed theoretical framework. His theory is described next, in Chapter Two.

CHAPTER II

AN OVERVIEW OF DABROWSKI'S THEORY

Dabrowski's theory of Positive Disintegration is a general theory of human development which is very broad in scope.[1] It provides a conceptual framework within which one can approach many of the central questions of human experience. It is a multilevel and multidimensional theory emphasizing higher emotions and cognitive processes that guide and transform personality structure from lower to higher levels. Dabrowski feels his theory makes its greatest contribution in two ways: (1) his concept of the multilevelness of reality and of every human phenomenon, and (2) his discovery of the five forms of psychic overexcitability, which are modes or dimensions of mental functioning. These two key concepts will be elaborated more fully after a description of the theory itself. It constitutes a distinct conceptual system which differs from other theories in many ways. Some of these are discussed below.

Novel Aspects of the Theory

Importance of Emotion

Dabrowski believes that human development cannot be fully understood without the study of emotional factors. Emotional development is a neglected area in psychology. It has been studied as a phenomenon in itself but Dabrowski is interested in the differentiation and development of emotional functions throughout the life-span. Much importance is usually attached to intellectual development, but, according to Dabrowski, it is primarily the development of emotional capacities which makes us truly human. He does not regard emotions as unruly subordinates of reason, but assigns them a crucial directive role in guiding development. At higher levels of development there is a conjunction of highly refined emotions with highly refined intellectual processes. (Dabrowski, Kawczak, and Piechowski, 1970, p. 112).

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[1] The description in this chapter is based primarily on two sources: Theory of Levels of Emotional Development (Dabrowski and Piechowski, 1977a) and Mental Growth Through Positive Disintegration (Dabrowski, Kawczak & Piechowski, 1970). The other descriptions of the theory contained in this thesis are based on all the references for the Theory of Positive Disintegration listed in the Bibliography and Reference Notes as well as class notes from Dr. Dabrowski's graduate seminar and personal communication with him during the Fall of 1979.

Factors in Development

Psychological development is usually considered to be the result of the interaction between heredity and environment. Dabrowski calls these the First Factor and Second Factor respectively. However, he proposes, in addition to these, a Third Factor which consists of the autonomous processes a person brings to his own development such as self-awareness and self-control. Third Factor is the agent of conscious choice which enables one to become progressively liberated from biological and social determinants and which makes self-determination possible.

Positive Disintegration

Dabrowski calls his theory "Positive Disintegration", which refers to the process by which development proceeds from one level to the next. A change from a lower to a higher level of functioning requires a restructuring of the individual's psychological make-up. Development is a process of disintegration of structures of lower levels so that development can proceed to higher levels. Integration refers to a stable cognitive structure, whereas disintegration is a loosening or disorganization of mental structures and functions. These terms are used to describe the major levels of development. However, during this process the individual experiences many partial disintegrations followed by partial secondary integrations. The term "disintegration", therefore, can cover a wide range of states such as depression, anxiety, nervousness, and conflicts which may be short lived or long-lasting.

Basic Assumptions of the Theory

The theory rests on two basic assumptions which are explained by Dabrowski, Kawczak and Piechowski, (1970, p. 203). The first assumption is that there exist empirically verifiable differences between levels of all mental functions somewhat comparable to differences between levels of intelligence. Development involves a transition from lower ranks of the scale to higher ranks. This view is illustrated by the example of the emotional growth of a child who at first reacts egocentrically and lacks the ability to recognize or appreciate the feelings of others. At the other end of the scale is the individual who has gained a sensitive understanding of the feelings of others and who has developed conscious and refined forms of affective life, including the capacity for empathy. Dabrowski, then, unites the normative and the empirical in his description of personality levels. In his view, science must be expanded to embrace the study of human emotions, values and other distinctly human experiences. He regards, as empirical, all knowledge derived from experience whether sensory or introspective. If a certain phenomenon has been experienced by a few similarly developed individuals, and if it has been rigorously described, explained, and critically elaborated, it should be regarded just as objectively meaningful as knowledge shared by everyone. Objectivity should not depend upon numbers, but upon a rigorous and critical approach to experience. Since individuals at different levels of development do not share the same experiences, Dabrowski (1973) speaks of "multilevel empiricism":

> Multilevel empiricism includes all kinds of experiences of people of different developmental levels, pertinent to larger or smaller groups, if they are adequately described, irrelevant to the questions of whether they are grounded in sensory data or inner experiences of an instinctive emotional or intellectual nature. (p. 9)

A number of other scholars agree that the concepts of science and objectivity must be broadened. Giorgi (1970), for example, makes the point that science should include knowledge which is at least "potentially intersubjective" because "it is possible that not everyone can see the objective reality that one person sees (e.g. Galileo, Einstein)" (p. 114). Maslow (1966) also objects to the assumption that a study of human behavior can exclude values. He does not believe the limitations of classical science are intrinsically necessary and like Dabrowski, argues for an enlarged concept of science:

> In the broad sense science can be defined as powerful and inclusive enough to reclaim any of the cognitive problems from which it has had to abdicate because of its hidden and fatal weakness--its inability to deal impersonally with the personal, with the problems of value, of individuality, of consciousness, of beauty, of transcendence, of ethics. In principle, at least, science should be capable of generating normative psychologies of psychotherapy, of personal development...of esthetics...and who knows what else? (p. XIV)

Dabrowski's theory provides a framework within which human problems and experiences can be studied empirically because, in addition to providing general descriptive principles, he defines measurable developmental parameters (overexcitabilities) which are separable from the process of development itself.

The second major assumption of the theory is that development from lower to higher forms of mental life is not a harmonious, peaceful, and painless process. It involves tension, struggle, nervousness, and depression if higher levels are to be attained. Positive Disintegration, in other words, is not experienced as positive. The theory puts special emphasis on the positive role of these "negative" experiences because their developmental significance is often overlooked. These experiences contribute to growth of sensitivity to others and to one's own development. However, this does not mean that we can discount the positive developmental impact of experiences of joy and happiness. In fact, when such experiences are intense, Dabrowski et al (1970) characterize them as disintegrative: "Another group of facts of disintegration are the phenomena of contemplation, ecstasy, improvisation or creation inspiration in which we become to ourselves as well as others, a new and different person" (p. 17).

Background of the Theory

Dabrowski's theory of Positive Disintegration is the product of a lifetime of study and experience. After obtaining a medical degree and a Ph.D. in experimental psychology, he studied psychology and education with Piaget. After that he obtained psychoanalytic training in Vienna and had additional training in clinical psychology and child psychiatry in Paris and Boston. In the preface to Volume I of Theory of Levels of Emotional Development (1977a) he relates some experiences which gave him an intuitive basis for the concept of multilevelness. He found certain individuals to be superficial, vulgar, egocentric, lacking in emotional responsiveness, and capable of quickly forgetting grave experiences. In sharp contrast to these people, others were sensitive, courageous, and capable of sacrifice. He noticed this difference also in individual manifestations of behavior such as "laughter" for example. Primitive, brutal laughter evoked by watching someone's misfortune or humiliation appeared as something vastly different than subtle laughter or a smile conveying warmth and encouragement. It was striking to him that such disparate manifestations of behavior did not coexist in the same individual.

Several decades of clinical experience as well as both cross-sectional and longitudinal studies of children, adolescents, and adults --talented and creative as well as retarded, psychopathic, and psychoneurotic individuals made it apparent that within each group, individuals function at very different levels and that these levels have certain distinguishing features. In addition to clinical observations, Dabrowski studied the life histories, biographies and diaries of many prominent individuals. He found that writers, composers, artists, and other creative people manifest, from early childhood, an enhanced mode of reacting to the world around them. He also found that many of the geniuses and saints of mankind have certain similar qualities. He noted remarkable concurrence in the basic values of eminent, highly evolved human beings such as Christ, Ghandi, Socrates, and Schweitzer. Like Maslow, Dabrowski rejects relativism in matters of "value", for there are basic moral values which transcend cultures and which are broadly human. Dabrowski contends that the higher the level of development of a group of individuals, the more unanimous and objective are their value judgements. (It should be noted that in Dabrowski's view, a person need not be famous or a public figure to reach a high level of development.)

Experiencing the contradictions of everyday life had its counterpart in Dabrowski's extensive study of psychological theories. Dabrowski viewed the development of a human being as a phenomenon very different from everything encountered in nature because it is controlled by forces specific to human beings which give it a character irreducible to purely biological laws. Dabrowski did not believe that experimental results with animals could explain complex human behavior, nor could he accept social theories which associated human development with environmental influences only. In his view, references to environment alone could not explain the great differences among children in the same family nor could it explain the marked individual differences in how stressful life events are experienced and handled. He then formulated his own theory. The concept of "multilevelness" carries through every aspect of his theory. It is the key which provides a new understanding--a new approach to human behavior and development.

The Concept of Multilevelness

In Volume I of Theory of Levels of Emotional Development (1977a), Dabrowski and Piechowski explain the concept of multilevelness and its relationship to the findings of the famous English neurologist, John Hughlings Jackson (p. 10-14). Jackson, in his lectures on the Evolution and Dissolution of the Nervous System demonstrated that the nervous system retains levels of the different evolutionary age in its organization, forming a hierarchy. He proposes that evolution is a passage from (1) the most automatic to the most voluntary and (2) from the simplest to the most complex. Thus the evolution of the nervous system is an example of new structures and associated functions with the highest levels being the most complex and also the youngest (newest). Jackson said that higher levels control lower levels through inhibition. When extreme fatigue, alcohol or epileptic seizures dim consciousness, the highest level of neurological activity is impaired or "dissolved" and the next lower level is now the controlling one. But this lower level is less complex and more automatic. If, in turn, this level is "dissolved" the next lower and even more rigid and automatic level will take over. He stated automatic actions are fairly independent of each other. They must run their course and can be stopped but cannot change pattern. Complex neurological activity, on the other hand, requires intricate and mutually responsive mechanisms. Jackson associates a hierarchy of levels of functioning with evolution. His approach is both multilevel and evolutionary.

Dabrowski extends some of Jackson's principles to the psychological development of emotional-cognitive functions and personality. His theory rests on the idea of an individual evolution rather than on ontogenesis. Dabrowski's approach can be described as multilevel, evolutionary and non-ontogenetic. In other words, his concept is very different from that of a succession of changes occurring during the life cycle--childhood, adolescence, adulthood and old age. In this respect, emotional development is different from intellectual or neuromuscular development. To illustrate this, Dabrowski compares his theory to that of Piaget. In Piaget's formulation, cognitive development is described in terms of stages, each representing a more complex level of cognition produced during the course of ontogenesis (during the course of the life span or history of development of the individual). Piaget's approach is ontogenetic. A link between the evolutionary and ontogenetic approach can be seen in studies of movements and reflexes during early childhood. For example, the newborn has a grasping reflex which allows it to support its weight. This ability reaches a peak at 40 days then diminishes. It is not until the age of 5 that the ability is regained at the same level of proficiency. By then it is voluntary and the early, automatic reflex is inhibited. Thus, a higher level in the evolution of functions is acquired in the course of ontogenesis. The ontogenetic and evolutionary aspects of development appear together in this sequence. However, with regard to emotional development there is no discernible ontogenetic pattern. In other words, the level of emotional functioning is not produced automatically during the life cycle. Few people reach the highest level of emotional development. Therefore, a high level of cognitive functioning does not guarantee a high level of emotional functioning, although the reverse may not be true. It is possible for an individual to be intelligent, but emotionally retarded.

With regard to emotional and personality development, Jackson's principles are applied as follows: In the multilevelness of many levels of human functioning, higher levels control lower levels through *inhibition* (within the individual). Reflection, inhibition, and hesitation are *less automatic* than an immediate response to stimuli. Development involves a transition from less refined to more refined functions, from external to internal control, from impulse to reflection, from automatic to deliberate actions, from egocentric to allocentric behavior, and from a scarcely conscious to a highly conscious mode of experience. Emotional development, rather than being measured in terms of age or learning, is measured in terms of structural and functional reorganization. This means that development is viewed as a function of the extent and depth of psychological transformations within the individual. These transformations involve the remaking of the cognitive and especially the emotional structure underlying behavior. The structures can be recognized by the presence or absence of traits called dynamisms, which are the forces which shape development. Dabrowski's theory, then, rests on the idea of individual evolution through different levels, and each level has a characteristic set of dynamisms.

Dabrowski applies the concept of multilevelness to every human function and expression of behavior. Within this framework, functions such as aggression, pleasure, courage, sadness, laughter, aesthetic attitude, attitude toward death and many others are not regarded as unitary characteristics. Every mental function, emotional, volitional or intellectual has a multilevel structure. Each one can manifest itself at different levels. Dabrowski describes five levels of emotional and personality development as well as many functions or expressions of behavior at each of the five levels.

Types and Levels of Development

Development involves the transition from less refined to more refined functions as the result of the process of positive disintegration. Dabrowski identifies five levels, beginning and ending with an integrated personality (primary and secondary integration). These integrations are stable cognitive structures, but the first one--primary integration is the lowest and least differentiated stage of development marked by egocentricity, lack of sensitivity and a narrow conception of reality. Secondary integration, which is rarely achieved, is the highest or most differentiated level of development and is a highly conscious, self-chosen, self-educated, authentic personality. Between these two integrations, there are three levels of disintegration. These disintegrations begin with a loosening or disorganizing of the integrated structure of the lowest level and eventually progress to a movement toward an "ideal" of personality or a striving for self-perfection. These five levels can be grouped into two qualitatively different stages: the heteronomous and the autonomous. (Dabrowski et al., 1970, p. 5). The heteronomous phase (levels one and two) is strongly under the influence of heredity and environment (First and Second Factor) and is therefore, a stage of development which is biologically and socially determined. The autonomous phase (the three higher levels) is self-conscious, self-chosen and depends increasingly on deliberate acts of choice. It is now that the Third Factor--the dynamism of conscious choice and valuation--begins to exert an increasing influence on development.

Dabrowski (1964) postulates a developmental instinct which is "a tendency of man to evolve from lower to higher levels of personality"

(p. XIV). This is the source or nucleus of all developmental forces and it acts differently at different stages of development, pushing the person toward higher levels. It operates with variable intensity among different individuals. The person begins life in an integrated, whole but unconscious (or scarcely conscious) state. In its beginning stages development is determined by biological and social influences but in its autonomous (accelerated) phase the person develops the capacity to transcend these influences and to become increasingly conscious and self-determined. During the course of accelerated development, the developmental instinct becomes stronger than the forces of primitive impulses and acts against these automatic and limited functions. In Dabrowski's (1973) words:

> Throughout the course of life of those who mature to rich and creative personalities there is a transformation of the primitive instincts and impulses with which they entered life. The instinct of self-preservation is changed. Its direct expression disintegrates, and is transformed into the behavior of a human being with moral values. The sexual instinct is transformed into and bound up in lasting and exclusive emotional ties. The instinct of aggression may still be active in the area of conflicts between moral, social and intellectual values, transforming them into higher forms. (p. 22)

Development can be one-sided or it can be many-sided (universal, global, accelerated). One-sided development may lead to the perfection of certain capacities or skills, but there is no inner psychic transformation--it does not engage the total personality structure. Sometimes one-sided development is associated with asocial or antisocial personalities, Dabrowski et al. (1970) explain many-sided development as follows:

> It is multidimensional and fully rounded if it is not restricted to the perfection of one or some capacities and skills, but includes a transformation and refinement of

> all basic aspects of mental life, especially innate drive, emotions, intellect, volition, imagination, moral, social, aesthetic, religious sensitivity, etc. (p. 15)

The reality function, like all other mental functions, changes and develops as the individual progresses from one level to another. In other words, there are lower and higher levels of reality as well as intermediary levels. Individuals at higher levels of development perceive their own level of reality as well as that of lower levels. They understand the lower levels because they remember them--through "affective memory". The five levels of development are outlined briefly below but will be described in greater detail in Chapter Eight. The dynamisms, or intrapsychic forces which carry out the process of restructuring emotional and cognitive reorganization, are given in Appendix A.

Level One: Primary Integration

At this level the self is at the center of the universe. In infants it is limited to the satisfaction of the basic needs for sleep, food, and motion. In adults, all mental functions continue to be subordinated to egocentric aims. Conflicts are external, not internal. There is no mental transformation of stimuli and no reflection. The individuals "use" others to satisfy their selfish desires.

Level Two: Unilevel Disintegration

Second factor predominates and people are highly susceptible to environmental influence. At this level individuals think with rather than about their environmental influences. They experience many doubts and uncertainties as the cohesive, integrated structure of level one begins to loosen and fragment. Individuals at this level do not really conceive of themselves as capable of changing. They might think of themselves as a certain "type" by "nature" or even as a "product of the environment".

Level Three: Spontaneous Multilevel Disintegration

An internal hierarchy of values begins to emerge based on a sense of the "higher" and the "lower" within oneself and it manifests in the individual as "depth". Third Factor appears, enabling one to reflect on biological and environmental influences and to develop awareness of the inner psychic milieu (internal mental environment). Individuals at this level now begin to play a strong role in their own development, rebelling against certain biological and social influences. Thus there is conflict between the third factor and first and second factors. The person creates a "higher self" in opposition to the "lower self". Intuition and creativity develop. Multilevel individuals express in a constructive manner, their overreactivity to the human condition.

Level Four: Directed Multilevel Disintegration

At this level the individual's hierarchy of values is maintained consciously. Development and transformation of oneself is more conscious and self directed, permitting few lapses back to lower levels of functioning. There is pronounced growth of empathy and the personality "ideal" becomes more definite and distinct. The individual has a high degree of self-awareness and self-control.

Level Five: Secondary Integration

There is now a reduction of developmental tension, and the appearance of great power, peace and tranquility. Such a person is capable of universal empathy. As one proceeds through the developmental levels, reality becomes more subtle. Referring to level five, Dabrowski et al. (1970) say: "There appears a growing need to transcend the sensory, verifiable reality toward the empirical reality which can be attained through intuition, contemplation and ecstasy rather than through the senses" (p. 22).

Psychic Overexcitability

The five forms of psychic overexcitability were discovered by Dabrowski on the basis of clinical observations prior to the formulation of his theory. He noticed that many children, adolescents and adults consistently overreact to external and internal (intra-psychic) stimuli. He called this tendency "overexcitability" to indicate that the reaction exceeds an average response in intensity, frequency and sometimes duration. He also noticed that although the stimuli may differ, the overreacting was limited to certain dimensions. He distinguished five forms: psychomotor, sensual, imaginational, intellectual, and emotional. Another important characteristic of the reactions of overexcitability is that the response is specific for that type of overexcitability that is dominant in the individual. Each individual has preferential modes. A wide range of stimuli will be converted to the dimension in which the individual is the most reactive. For example, a person with prevailing emotional overexcitability will always consider the emotional implications of an intellectual question (Dabrowski, 1974, p. 116). To the same intellectual question, a person highest in imaginational overexcitability might respond first with images or fantasies (Piechowski, 1975, p. 255). Each form of overexcitability can be viewed as a mode of acting and experiencing--as a dimension of mental functioning.

Manifestations of Overexcitability

The descriptions below are taken from Volume I of Theory of Levels of Emotional Development (Dabrowski & Piechowski, 1977a, p. 33-36). They are based on an earlier description of Dabrowski and an analysis of 433 instances of overexcitabilities identified in autobiographical material of subjects participating in research.

Psychomotor

This mode is one of restlessness and need for action. It seems to be a function of organic excess of energy or enhanced excitability of the neuromuscular system. It manifests in rapid talk, restlessness, intense athletic activities, chain smoking, acting on impulse, and gesticulation while talking. In responding to the question of what he really loves to do, one high school student answered "going full bore on a motorcycle, water skiing as hard as I can, flying a plane, playing a hard game of basketball".

Sensual

This is a mode of surface interaction through sensory inputs in terms of pleasure or unpleasure (Dabrowski & Piechowski, 1977b, p. 5). It can manifest as a heightened experiencing of sensory pleasure such as the need for luxury, comfort, stereotyped or refined beauty, fashions, varied sexual experiences, and numerous but superficial relationships with others. One subject gave the following response about touching, "Touching people, or warm, living things, especially smooth or silky things give me the most enjoyment, for example, petting rabbits".

Imaginational

This manifests through rich association of images and impressions, use of metaphor in verbal expression, strong visualization of experience, and inventiveness. It can involve predilection for magic or fairy tales, poetic creations and fantasy. One subject gave this response about fantasies and daydreams: "I dream most of the time about situations involving myself and other people. I may know the people, know of them, or make them up".

Intellectual

This is a mode of analysis, questioning and search for truth. It is endowment for the development of active, penetrating, and creative cognition. (Dabrowski uses the word "cognition" to mean something different than, although related to, the usual meaning of the word "intelligence". Skillful manipulation of data--"brain like a computer" would not be a manifestation of intellectual overexcitability because there is no felt need to penetrate into the meaning of knowledge or experience.) It can manifest through persistence in asking probing questions, analysis, theoretical thinking, reverence for logic, and thirst for knowledge. Here is one example: "The farthest back I can remember was when I had my third birthday. I received a desk that day and learned to say 'three' instead of 'free', I can still picture that scene in my mind". This is another example: "I most like to concentrate on the 'why' of things instead of the 'how' of things".

Emotional

This is a function of experiencing emotional relationships. It manifests as strong attachment to persons, places, or living things. It is very important to note that intensity of feeling and display of emotion alone are not developmentally significant unless the experiential aspect of a relationship is present. For example, if a child is refused candy, he may throw a temper tantrum to display anger or he may go away sad, feeling he is not loved. In the first case, there is a display of emotion; in the second, a human relationship.

Other manifestations of emotional overexcitability include inhibition (timidity and shyness), excitation (enthusiasm), anxieties, concern with death, strong affective memory (memories of feelings), feelings of loneliness, exclusive relationships, and difficulty adjusting to new environments. For an "emotional" person as defined here, relationships of friendship and love are usually developed with few persons. Such close and exclusive relationships may be the only source of meaning in life. Examples of emotional overexcitability in a child would include crying at the sight of a dead bird, worrying when seeing a physically handicapped person, or suffering insomnia or nightmares after an upsetting movie.

Overexcitabilities and Development

Overexcitabilities, because they involve an enhanced mode of reacting to the world, have the effect of intensifying experience. They can be detected in children as early as the age of two or three. Development advances as a function of the strength of these five modes of experiencing. They determine in what way an individual is capable of responding. Within the framework of Dabrowski's theory, overexcitability is developmentally significant while ordinary excitability (a simple stimulus-response reaction) is not. The different forms are not of the same significance for development. Great strength of the psychomotor and sensual forms, in the absence of the others, limits development to the lowest levels only. Developmental potential is strongest if all or almost all forms of overexcitability are present in the individual. The intellectual, imaginational, and emotional forms must be present if a high level of development is to be attained. These are necessary for autonomous development. The highest level is possible only if emotion overexcitability is the strongest, or no less strong than the other forms.

Appendix B provides a diagram which summarizes the conceptual structure of the theory. Many of the mental functions described by Dabrowski are listed in Appendix C.

Dabrowski's Theory and Musicality

In this outline of Dabrowski's theory, I have emphasized three features: (1) the significance of emotion, (2) the five forms of overexcitability, and (3) Dabrowski's concept of multilevelness. Dabrowski believes that our understanding of human behavior and development cannot be understood without the study of emotional factors. In the same way, I believe that an understanding of musicality must include a careful consideration of the emotional component. Since the overexcitabilities determine how an individual responds and since they correspond to basic modes of mental functioning, they provide a basis for approaching musicality from the perspective of psychological characteristics of the human being. The concept of multilevelness, according to Dabrowski, applies not only to personality development but to every human phenomenon. This would apply to musicality as well as to music itself. Therefore, I will deal with the question of "higher" and "lower" responses to music in this dissertation.

The Organization of the Remaining Chapters

In Chapter One I stated that there is a need for a broader and more multifaceted concept of musicality and that this concept should be based on the literature as well as on Dabrowski's theory. The literature contains an overwhelming array of studies, ideas, and theoretical positions relating to the experience of music. In the chapters which follow, I begin with a review of psychological approaches to musical experience. This review is organized into what I have identified as three major orientations: The Psychology of Music (Chapter III), Musical Development (Chapter IV), and Experimental Aesthetics (Chapter V). The psychological literature has been organized this way in an attempt to "capture the flavor" of these orientations. I include summaries, discussions, and thoughts about education at various points in these chapters where it is appropriate to do so. At the end of each of these three chapters there is a section entitled "Implications for Musicality". Here I describe what appears to be the concept of musicality based on the literature and follow with a brief discussion of the contents of the chapter with reference to the five basic dimensions of mental functioning (overexcitabilities). Having established what might be called the "existing" concept of musicality, I begin to move toward a broader concept by discussing musical responsiveness in terms of the five basic modes of mental functioning. Chapter Six, entitled "Music and the Overexcitabilities" draws upon literature from diverse and widely ranging sources. References are also made to earlier chapters and Dabrowski's concepts are included. Chapter Seven, entitled "Musicality" contains a description of the broad concept of musicality based on the literature as well as the five basic modes of mental functioning. This is followed by a discussion of related issues, including a section on the developmental significance of overexcitabilities and a summary of some basic positions in the field of aesthetics. In Chapter Eight, "Musicality and Human Development", I place the concept of musicality into Dabrowski's developmental framework. In this chapter, Dabrowski's ideas are interwoven with statements from the literature which seem, to me, to represent musical experience at different levels of reality. These chapters--up to and including Chapter Eight--contain the basic substance of this thesis. Chapter Nine, entitled "Empirical Research on Musicality", includes examples of musical responses from 16 listeners. This chapter illustrates how musical responses are interpreted within the conceptual framework of this study and also provides suggestions for future research. Chapter Ten contains a general summary and a discussion of some of the major implications of the broad concept of musicality.

Literature in the field of the psychology of music is discussed next, in Chapter Three. From a Dabrowskian perspective it could be said that this chapter begins at the biological level, with a "reduced" human being and a very much "reduced" form of music.

CHAPTER III

THE PSYCHOLOGY OF MUSIC

Interest in the psychology of music began when the field of psychology emerged as a discipline over one hundred years ago. The psychologist does not inquire into music as such. He is primarily interested in what occurs in the person who hears music. His field of interest includes the nature of tone sensations, physiological and psychic reactions to music, motor responses, emotional responses, and similar questions. Much of the research in the psychology of music has centered on (1) auditory or musical perception, and (2) the study of musical ability. Studies of musical ability are often undertaken to gain an understanding of the processes underlying musical perception, and perception itself is considered to be the crucial factor underlying the musical response.

This chapter provides an overview of the field of psychology of music from its beginnings to recent developments in the area. Major lines of thought and representative studies are included. This is followed by a section which describes how knowledge from the psychology of music affects education and the chapter ends with a brief summary and a discussion of implications for musicality.

The Psychoacoustic Tradition

Acoustics is the branch of physics which investigates sounds and tones as natural phenomena in the external world. Whereas music is the art of sound, acoustics is the science of sound. Even though they deal with sound in entirely different ways, the science of acoustics is related to some of the practical problems of musicians and acoustical principles are often included in books on music theory. The acoustician is interested in questions about soundwaves and waveforms, vibrations and frequency, the medium and the transmission of sound waves, and the natural laws that these phenomena obey. This is useful knowledge, but it does not deal with the fundamental nature of music or with the question of the psychologist who wants to know how musical sounds affect people.

The psychologist's question has been investigated largely, through the psychoacoustic approach. Psychoacoustics studies the relationship between the physical properties of auditory stimuli and the sensations they produce in the recipient. The kinds of questions addressed by psychoacousticians have centered around the origin of tone sensations, the act of hearing, the physiological mechanisms (ear and brain) that are involved, the nature and structure of simple and complex tone sensations and, in general, the nature of the correspondence between the physical dimensions of the acoustic waveform and the phenomenon of tone perception. Implicit in the psychoacoustic model is the assumption of a one-to-one correspondence between the physical attributes of sound and perception of sound. The physical stimuli or wave movements are brought to the ear and brain where they are transformed into, or perceived as, sounds. The basic psychoacoustic view is explained by Seashore (1938/1967):

> The psychological attributes of sound, namely, pitch, loudness, time and timbre depend on the physical characteristics of the sound wave: frequency, amplitude, duration and form. In terms of these we can account for every conceivable sound in nature and art--vocal or instrumental, musical or nonmusical ...everything that is rendered as music or heard as music may be expressed in terms of the concepts of the sound wave. (p. 2)

Thus pitch is the musical ear's ability to interpret frequency. Similarly, amplitude (intensity), duration, and form are perceived as loudness, time and timbre respectively. In other words, everything we hear in the tone is based on the physical attributes--on the length, breadth and shape of the sound wave. There is a cause and effect relationship between the two.

Without psychoacoustic phenomena, music, as we think of it, would not exist. A large body of psychoacoustic literature has accumulated over the years. These studies have revealed that auditory perception is an extremely complex matter. It has been found that a simple one-to-one correspondence between the basic physical stimulus and the perceptual experience simply does not exist, except in rare instances. Frequency and amplitude give rise to subjective sensations of pitch and loudness, but these terms are not interchangeable. Pitch is not the same as frequency, and it is not accurate to say that the frequency of a tone specifies its pitch. As long ago as 1935, Stevens demonstrated that there is an interaction between amplitude and frequency. Pitch perception is altered by changing the intensity (amplitude) of a tone. Stevens provided a graph to show that tones of a high pitch appear to go higher as they become louder and low tones appear to become lower. Related to this is the Fletcher-Munson study (1933) which demonstrated the influence of changing frequency on the perception of loudness. Loudness has also been found to affect perception of timbre. In fact, there are complex interactions between all the components of a tone such that the pitch heard depends partly on the intensity of the tone, the loudness varies with the frequency, and the timbre (tone color) changes with the other two dimensions.

Typically, psychoacoustic investigations make use of simple or pure tones isolated from a musical context. A pure tone (sine wave) is a tone produced by an electronic tone generator. It lacks partial vibrations (harmonics) and therefore lacks what we ordinarily think of as timbre (the auditory equivalent of color). Pure tones are used to achieve experimental control. Their properties are physically specifiable and can be manipulated by the researcher. However, it has been found that there are differences in the perception of pure tones and complex tones (such as those produced by musical instruments). One example of this difference is the effect of intensity on the perception of pitch changes. As Forgus and Melamed (1976, p. 114) point out, complex tones do not show the apparent pitch changes when intensity is increased as do the pure tones. From the point of view of perception, complex tones are more stable than pure tones. Recent studies of pitch perception (Sergeant, 1973; Siegel, 1981) have demonstrated that pitch judgments for complex tones are superior to judgments of pure tones. Because of these findings, researchers are beginning to question the use of pure tones in research on musical perception and are beginning more and more to use complex tones as the basis for data collection.

The topic which has probably received more attention in the psychological literature than any other aspect of music is that of musical ability. What does it mean to be musical? During the last six or seven decades, this question has captured the imagination of researchers to such an extent that there are dozens of tests which attempt to identify and measure the elusive qualities of musical talent. Since the aptitude testing movement began with a psychoacoustic approach, it will be described in the following section. However a discussion of testing leads to some broader issues including objections to the psychoacoustic approach, and finally to a consideration of the more recent research in musical perception which involves a "cognitive" approach. The remainder of the chapter will deal with these issues.

Musical Ability

For purposes of the present study, the literature on musical ability is of interest primarily for the insights it can yield regarding musicality and the nature of the musical experience from the standpoint of the listener. Therefore, this discussion will not focus on all the problems encountered in test construction, standardization procedures and other technical matters. Instead, the emphasis will be on the views about the nature of musical ability underlying various tests as well as how test construction relates to notions about the perceptual and cognitive processes involved in musical activity. These matters have psychological as well as educational significance for beliefs regarding the nature of musical ability ultimately affect curriculum decisions and teaching procedures.

Music tests can be assigned to one of two broad categories: (1) aptitude tests which attempt to measure innate capacity or potential, and (2) achievement tests which measure skills or knowledge gained as a result of learning. Aptitude is independent of achievement by definition. However, the relationships between heredity and environment (innate capacity versus learning) are so complex that it seems impossible to disentangle aptitude from achievement entirely. In recent years, psychologists have recognized that aptitude tests do not measure innate capacity according to the rigid traditional definition of the term. Achievement test results may depend partly on aptitude, and aptitude test results may depend partly on training (Lehman, 1968, p. 9). The present discussion is limited to aptitude tests, which deliberately attempt to minimize the effects of learning. To the extent that achievement is minimized, the test author's choice of content is severely restricted.

Why, it might be asked, would anyone want to measure musical ability or aptitude? Under normal circumstances individuals who can play an instrument or sing in tune are considered musical. On the other hand, people often assert, with great conviction that they are "unmusical", "tone-deaf" or "have no ear". It appears that musical ability is often regarded as a dichotomous trait--a person is either "musical" or "unmusical". However, as Edwin Gordon (1971, p. 10) explains, this idea erroneously implies that (1) musical aptitude is demonstrated only by performance, and (2) that aptitude and achievement are synonymous. He goes on to say that although technical ability is considered a part of achievement, that none of the muscular coordination tasks involved in singing or playing is _necessarily_ contingent on aptitude. Instruments and voice are only media through which an individual expresses aptitude whether at a high or low level. Good technical facility does not imply corresponding aptitude. Paul Farnsworth (1969) would agree with Gordon, for he points out that musical ability should not be confused with motor skills. He goes on to discuss the many students who have practiced long hours to learn instrumental technique, but who admitted to no real love of music and whose teachers or parents told them exactly how to play, "The performance expressiveness of their playing was not their own but was imposed on their playing by others", (p. 157).

There are three basic ways in which musical ability can manifest itself--in composition, in performance and in listening. The last one is very important for if a listener can be musical it is necessary, as Davies (1978) points out, to create a new definition of musical ability --one which does not rely on the production of music as its criterion.

Most musical aptitude tests have been organized around certain sensory or perceptual capacities that the test authors consider to be essential ingredients of musical capacity. There are two traditional schools of thought regarding the nature of musical aptitude. One is the "elemental" or "atomistic" theory of Carl Seashore and the other is the "unitary" or "omnibus" view of James Mursell. Most aptitude tests reflect one or the other of these views, and some tests make use of principles from both. Three representative tests are included in the discussion that follows.

Seashore's Elemental View

The work of Carl Seashore, who is sometimes called the "Father of the Psychology of Music" is a landmark in the history of research in the area. He believed that "not only is the gift of music inborn, but it is inborn in specific types", (Seashore, 1919, p. 6). This gift, he claimed, could be analyzed into its constituent elements, many of which can be isolated and measured with reasonable precision. His approach to testing was based on the psychoacoustic model. In contrast to earlier studies which attempted to deal with larger musical entities, often leading to inconclusive results, Seashore's approach appealed to researchers because of the opportunity for better experimental control, statistical manipulation of data, and interesting laboratory hardware. His work dominated the psychology of music during the second and third decades of the century.

The Seashore Measures of Musical Talents (Seashore, Lewis and Saeveit, 1960) were first published in 1919 and revised in 1939. He argued that since the tones which make up music are, in essence, a matter of pitch, intensity, time, and timbre, that discrimination tests in these areas should make it possible to identify students with the best musical potential. He admitted that there were other factors necessary to musical success and stated that his test should be used in conjunction with interviews, auditions, and other appropriate data. However, he believed that the capacities his test measured were mandatory for a musician.

His battery contains six tests of auditory capacities--pitch, loudness, rhythm, time, timbre, and tonal memory--which together yield a musical profile. Each must be interpreted as a test of one narrow capacity for there is no total score possible. In keeping with psychoacoustic principles, the test requires subjects to listen to nonmusical sounds such as pure tones, clicks, buzzes, and artificially synthesized complex tones. Seashore deliberately avoided musical material to escape the effects of training or culture. The sense of pitch is tested using fifty pairs of frequencies while all other components of the sound wave (amplitude, duration, complexity) are held constant. This is done to ensure that the sense of pitch, and nothing else, is tested. Similarily, the tests of loudness, time, and timbre require judgments of paired tones. The tonal memory test is a test of short-term memory and it requires pattern recognition and comparison. Paired three, four, and five note sequences are given and the subject must identify which note differs in the two presentations. These sequences are atonal. In other words, they do not sound like melodies but like a random sequence of unrelated tones. In the rhythm test, five, six, and seven-note patterns are paired and the subject must decide whether the second pattern is the same as or different from the first.

Since their original publication, Seashore's tests have been given to thousands of individuals and have been subjected to extensive investigation. Some researchers, inspired by his model, have attempted to construct similar measures, but these were generally inferior to Seashore's (Leonhard and Colwell, 1977). Others reacted to his doctrine of inherited musical capacities and tried to demonstrate that scores on his tests could be improved by training but the results of these attempts vary. Many have reported no significant improvement but some, for example Wyatt (1945) have found that many individuals can raise their scores with the proper kind of training. The many validation studies based on empirical criteria (musical achievement) have yielded contradictory results, due, in part, to the various kinds of achievement criteria used. Most studies have used teachers' ratings and grades.

Mursell's Omnibus View

There was a famous controversy during the 1930's and 1940's between Seashore and James Mursell who criticized Seashore's method for its atomistic conception of musicality and mechanistic approach to measurement. According to Mursell (1937):

> We do not merely receive stimuli through our ears. We organize them into patterns and relationships because of the operation of our minds. And what we hear is not the sensation imposed upon us from outside, but the organized pattern derived from the action of the mind upon data from without. (p. 50)

Mursell did not believe musicality depends directly on sensory abilities but on psychological capacities which are found in different degrees and combinations. He held that musicality depends on affective response to and perceptual awareness of tonal and rhythmic relationships--the most fundamental thing being emotional responsiveness which can manifest itself without any clear apprehension of the structural elements of music. He questioned whether Seashore's specific capacities functioned in the same way in isolation as when they exist in a musical context. His views on musical perception were based on Gestalt psychology which emphasizes the importance of overall configuration in perception. He criticized Seashore's tests because they did not touch in any way on melodic configuration, harmonic sequence, or other elements of music. He insisted that perception of music was not merely responsiveness of the ear as a receptor of the sound wave, but is an apprehension of the "dynamic relatedness of tone" (p. 300). Mursell never published a test, but the testing approach which is associated with his views is called "psychomusical" as opposed to "psychoacoustic" because test authors make use of musical sounds produced by standard instruments and the test items are given in a more musical context. This approach is labelled "omnibus" or sometimes "unitary" because its proponents believe there is a general musical ability factor which pervades most musical tasks.

The first well known test to use the omnibus approach was the Wing Musical Aptitude test which was first published in Britain in 1939. This battery, which represents the first innovation in testing after Seashore, is described by Lehman (1968, p. 47). In contrast to Seashore's test, the Wing test uses the piano as a stimulus and test items are comprised of musical elements (melody, harmony, and rhythm) instead of the basic components of tone. The battery contains three tests of an elementary, non-preferential kind and four tests of a more musical, preferential kind. For example, one subtest in the first group requires the subject to indicate how many tones he hears in a chord. In the second group of subtests, the subject hears melodies as originally composed and also in a "mutilated" fashion. The subject must decide if paired items are the same or different, and, if different must indicate a preference. This taps the ability to detect which version has the best harmony, balance, phrasing or accents. These four preference subtests are in keeping with the Gestalt idea that musical aptitude is more than just acoustic reception. The perception of music as such and musical judgment must be taken into account. The battery yields a score for each subtest and also a total score. This also reflects the omnibus idea that musical aptitude involves a general factor. Wing's factor analytic study found a general factor which accounted for forty percent of the variance (Shuter, 1968, p. 90). He believed that aptitude, as measured by his battery, was largely innate, not influenced by the environment and not necessarily related to intelligence.

James Mursell became the most influential authority in music education and his ideas had a strong impact even into the early 1960's.

Many music educators believe that his powerful opposition to Seashore's aptitude tests served to stifle research in the area on this continent. Fiske (1976, p. 28) suggests that his views negatively influenced the general attitude toward the experimental approach to problem solving. Leonard and Colwell (1977) speaking from a music educator's perspective, state that "after the departure of Seashore from the scene, an unfortunate hiatus in research in the psychology of music occurred and lasted until mid-century (p. 82). They go on to explain that in the 1950's there was a gradual resurgence of interest in the field which was solidified by the publication of Edwin Gordon's Musical Aptitude Profile in 1965. This test has been carefully and thoroughly prepared, is widely known on this continent, and is considered to be one of the most important contributions to the continuing study of musical aptitude.

Gordon's Musical Aptitude Profile (1965) is a battery of seven subtests divided into three groups which he labels Tonal Imagery, Rhythm Imagery, and Musical Sensitivity. He composed the musical examples himself and they are performed by a professional violinist and cellist. The tests are somewhat similar to the second group of subtests in the Wing battery. Each item provides a musical "statement" followed by an "answer" of equal length. For example, in one of the Tonal Imagery subtests, the subject compares two melodies and must decide if the second is an embellished melodic variation of the first, or an entirely new melody. In one of the Rhythm Imagery subtests, the subject listens to paired examples and decides if the second one accelerates, slows down or remains the same in tempo as the first. The Musical Sensitivity subtests require the subject to indicate which of two versions of an item makes "better sense" or "sounds better". For example, in the balance subtest, the two items in the pair are played with different endings and the subject must decide which is most appropriate. The test yields a score for each subtest and a composite score.

Gordon's test reflects his view that musical aptitude consists of a number of dimensions and that each individual has different degrees of different dimensions of aptitude which are related to overall aptitude. He uses the word "imagery" to label two main sections of his test to differentiate them from recognition tasks. For example, the discrimination of higher and lower pitches or the identification of which note in a chord has changed involves hearing but not necessarily what Gordon calls "musical understanding" or "musical anticipation". Imagery is more than a mechanical acoustic feat. Gordon (1971) explains that "we hear, recall, understand, and anticipate musical sounds through tonal imagery" (p. 25).

A comparison of the Seashore, Wing, and Gordon batteries illustrates the general trend away from an exclusively psychoacoustic approach involving basic sensory dimensions to a cognitive-musical approach which measures auditory perception at a more contextual (musical) level. Gordon's description of imagery reflects the current emphasis on a cognitive approach to musical perception.

The Cognitive Approach

During the past twenty years there has been a growing dissatisfaction with the behavioristic position and many psychologists have moved to a cognitive orientation which emphasizes inferred internal structure and views perception as an active process of construction on the part of the learner. From the standpoint of experimental research, the application of a cognitive approach to musical perception is relatively recent, although some of its central notions resemble those of James Mursell in the 1930's.

Commenting on the inadequacy of the psychoacoustic approach to music, Siegel (1981) states that "the classic textbook approach to the psychology of music is wrong-headed and destructive to the creation and enjoyment of music". She criticizes this approach because it is "empiricist, positivist, and reductionist" leading to a focus on the external stimulus and basic corresponding sensory dimensions. She adds that:

> When I discuss the psychoacoustic approach with musicians, I am usually left with the impression that it does not address very well their perceptual experience. Musicians are concerned with qualitative aspects of listening--mood, tonality, imagery, rhythm--areas for which traditional sensory acoustics has little to offer. At the same time, there has been a tendency among musicians to accept the psychophysical approach as correct even though it contradicts their own experience, perhaps because it represents "real science". (p. 200)

Why is the psychoacoustic model inadequate in its ability to account for musical perception? A few examples will illustrate the paradox encountered by experimenters using this approach. It was noted in the first part of this chapter that a simple one-to-one correspondence between the physical stimulus and perceptual experience does not exist. Seashore realized this and demonstrated it in his own experiments. He used an oscilloscope, which is a device which makes tones visible. Vibrations of air are transformed into a picture on a screen and everything that characterizes the tone as an acoustical phenomenon is represented in a certain feature of this picture. Seashore (1938/1967) made acoustic measurements of recorded performances of musicians and was surprised to find constant and fairly gross deviation of the frequencies they produced compared to what would have been expected on the basis of the written musical score. He concluded that:

> It is shockingly evident that the musical ear which hears the tones indicated in the conventional notes is extremely generous and operates in the interpretive mood. Compare this principle for the various singers and you will see that the matter of hearing pitch is largely a matter of conceptual hearing in terms of conventional intervals. (p. 269)

In his book, Seashore discussed the role of illusion in musical perception and referred to the many illusions that had been measured by psychologists. He believed that the significant thing for music is that much of the artistry in music lies in the utilization of these "normal illusions". If they were absent, accent, rhythm, and phrasing would be "hopelessly sterile" (p. 92).

However, in spite of Seashore's insights about the role of illusion in musical perception, he is widely known as a reductionist. His aptitude tests stress sensory discrimination and his work led to an acoustic bias in the psychology of music. Siegel (1981) believes he stresses the psychoacoustic approach because the scientific models of his day were reductionist and behaviorist in approach. The complex model of human perception utilized by cognitive psychologists simply "would not have been allowable in that time" (p. 215).

Davies (1978) in his discussion of the psychoacoustic approach, refers to the confusion of the scientist when he tries to reconcile the way a musician tunes his instrument with the measurements of an electronic frequency counter. He explains that this confusion arises because there are two criteria by which a note may be judged: "the way it sounds, and the way it is" (p. 42). The musician uses the first one. For example if a violinist plays a note which sounds out of tune, he does not check it with an electronic frequency counter, he simply shifts his finger down a bit. Therefore, as far as music is concerned, being "in tune" means sounding "in tune" to the listener. Related to this is the reference, in the earlier part of the chapter, to the complex interaction among components of the sound wave. Yet, when we listen to music, we are not really aware of these interactions among pitch, loudness, and tone quality. In other words, scientific findings seem to contradict our own experience. Orchestras do appear to play in tune, tones do not seem to change in pitch with every change in loudness and so on. According to scientific measurements of these sounds (as Seashore illustrated) the music should be cacophanous to a high degree (Davies, 1978, p. 46). The problem confronting the psychologist is to explain how people organize and extract meaning from this auditory material.

Recent experimentation based on a cognitive approach, assumes that an individual's enjoyment and understanding of music depend on his ongoing cognitive processing of perceptual information. The current concept of human information processing, which pervades much of cognitive psychology, has its antecedents in the communications theory of Shannon and Weaver (1949) and the development of computers. Massaro (1975) states that the central assumption of this model is that "a number of mental operations, called processing stages, occur between stimulus and response" (p. 20). Different theorists disagree about the details of the system, but the essential features of this class of theory are described by Donald Norman. It is a view of memory which emphasizes the flow and transformation of data through a series of interacting stages or structures. Incoming information arrives first at a sensory information store where it is held for a very brief duration as a physiological representation. The information is then encoded into a different format and proceeds to a storage system known as short-term memory where it is held for a somewhat longer duration. From here, the information, if it receives sufficient rehearsal and effective organization, is placed in a more permanent memory store--the long-term memory, which holds a more or less permanent encoded image of selective features of a stimulus. Long-term memory has a very large capacity, so information must be efficiently organized to facilitate eventual retrieval. Later, when retrieval is desired, decision rules are used to decide how to gain access to stored information and to decide upon the appropriate response (Norman, 1970, p. 2). Perception is an active process of construction whereby the perceiver extracts more or less of the information contained in the stimulus.

The idea that musical enjoyment and understanding has its basis in the cognitive processing of perceptual information seems logical to the musician because of the nature of music itself. The crucial quality that distinguishes music from the visual arts is a temporal one. Music unfolds over time and what is heard at a given moment is meaningful only in the context of what precedes and follows. To place individual tones into context the listener relies on his memory as well as his ability to formulate expectations as to what he is about to hear. It is through attention, memory, and expectation (his cognitive processing system) that the totality of the music is encompassed in the mind of the listener.

The capacities described by the information processing model are regarded as central to musical activity, especially listening to music. Furthermore, hearing acuity, within very broad limits, is of very little significance. Individuals who have superior hearing ability are not necessarily more musical, and those with certain auditory defects can be very musical (Sherbon, 1975). Recent experiments by psychologists of a cognitive orientation, illustrate that the ear (hearing acuity as such) is not the basis of musicality, and their studies are interpreted as evidence of an active information-processing mechanism underlying perception. Some representative studies are described below under two main headings: pitch perception and auditory memory. Following this is a section that touches briefly on the cerebral dominance issue which appears repeatedly in studies of perception.

Pitch Discrimination

In the music of Western cultures, the octave is divided into twelve equal units called semitones. This is the smallest meaningful unit of pitch in our music. However, for purposes of psychoacoustic measurement the octave is divided into twelve hundred units called "cents". The span of frequencies covered by the semitone is one hundred cents.

Siegel, Siegel, Harris and Sopo (1974) conducted studies to determine whether there exists a set of perceptual categories corresponding with each of these musical categories (semitones) that partition the frequency continuum. In one study, using pure tones, they generated pairs of tones covering five musical categories (semitones) in twenty equal steps. In this and similar experiments they found that musicians do perceive tonal stimuli categorically--a mode of perception previously thought to be unique to speech. In other words, the listener partitions the frequency continuum into a series of discrete categories, one for each semitone of the scale, and each category has a unique sound quality. Moore (1977) refers to a study done by Locke and Kellar in which they used triads of simultaneous pure tones and also found categorical perception. It was considerably more prominent among musicians than non-musicians.

Siegel has done a number of studies using pure tones and found that subjects in her studies misclassified "in between" notes placing them in one musical category or another instead of hearing them as intermediate. She makes the point that this perceptual categorization is an illusion--an illusion that is necessary, for if all the acoustic variations were heard, listeners would be so distracted that they would be unable to hear the music. She concludes that her data contradicts a view widely held about musicians--that they have a "good ear" or the ability to make fine sensory discriminations along a pitch continuum. They listen musically, according to expectations based on training rather than acoustically. She concludes:

> It appears therefore that listening acoustically is incompatible with listening musically, and that the ability to discriminate fine acoustic variations may actually be detrimental to the enjoyment of music. (Siegel, 1981, p. 215)

It should be noted, however, that Siegel's data were gathered in response to sine tones (pure tones) which are less stable, perceptually, than complex tones. Furthermore, musicians, in this type of study, are required to make pitch discriminations which are much finer than those required in music (i.e. distinctions smaller than a semitone). Siegel (1981) relates an anecdote about the effects of her experiments on musicians:

> We have observed first hand, the systematic, though hopefully temporary, destruction of a number of fine musicians' ability to listen musically by subjecting them to laboratory experiments where we have forced them to listen for fine acoustic differences amongst tonal stimuli. When we have done this we have found, invariably our musicians report this to be an extremely unpleasant experience. They complain about "losing their ear" that the music qualities that they normally hear in notes and intervals have disappeared, and that they all have begun to sound the same. Their performance often deteriorates and they assert that they feel they could do much better--if only they could listen to some music for awhile. (p. 214)

Parenthetically, it should be noted that when musicians talk about a "good ear" they are not referring to the ability to make fine sensory discriminations that are musically irrelevant. They are talking about an "ear" for the categories which are musically relevant in our culture.

Roger Shepard (1981) reports that he was unaware of Seashore's discovery that the minimum difference in frequency that can be detected between two tones varies as much as 200-fold between different listeners, when he embarked on some pitch perception studies in the 1960's. Among 50 unselected colleagues and assistants, he was astonished to find that only 62% could consistently indicate whether the second of two pure tones was higher or lower than the first, even when the tones differed by somewhat more than a semitone. The accuracy of several otherwise normally hearing subjects was no better than chance. He had to conclude that the label "tone deaf" may be applicable to an appreciable segment of the population. He noted, however, that those who had an interest in music or who played an instrument made few errors (p. 156). Again, it should be pointed out that Shepard was using pure tones and there was no musical context.

Shepard is aware of the fact that from a musical standpoint, the psychoacoustic approach has been unsatisfactory. Some of his recent research is based on the musical scale and the idea of tonality. Scales serve a structural and organizational function in music. They provide a basis for establishing tonal relationships that "make sense" musically. Psychologically, the tones of a scale are not just static categories, but they have dynamic tendencies. The first note of a scale is of special importance because it establishes a "tonal center" or a primary pitch around which melodies are structured. This is the pitch to which all other pitches ultimately return. Music constructed around a tonal center possesses "tonality". These characteristics of music have been explained by music theorists and are recognized by musicians. Only recently, however, have these musical structures been the focus of psychological research. Evidence for the importance of musical scales and tonality has been provided by a few experimental studies. Referring to these, Shepard comments that it is not surprising that evidence for the importance of tonality should emerge from laboratory studies. However, he adds that "What is remarkable is that this emergence did not take place until the 1970's " (p. 158).

Shepard's study on tonality is interesting partly because it introduces, experimentally, a musical context (a sequence of tones based on a scale). In one experiment, he used the flute stop on an organ to produce the tonal sequence, and used only the tones of the scale. In other words, subjects were not required to make distinctions smaller than a semitone. He provided test tones as completion tones and asked subjects to rate the tones as to their appropriateness for completing the tonal sequence. The results provided experimental evidence for the "tonal tendencies" that musicians have always talked about. Shepard calls it the "tonal hierarchy". In his words "most significantly, for the more musically sophisticated of our listeners, the tonal hierarchy, which had eluded psychoacoustic investigation for so long, emerged in sharp relief from the judgments made within a tonal context" (p. 160).

Shepard's experiments revealed that individuals differed enormously in the extent to which they interpret tones in terms of an underlying tonal system, depending on their background. The context served a different function for the musical than for the less musical listener. In all his studies he noticed a strong and consistent relationship between results of individuals and their reported amount of interest and training in music. The kinds of structural relationships extracted from tonal sequences depend on the listener's musical sophistication, whether innate or acquired (p. 165).

Music theorists and musicians have always been well aware of this "tonal hierarchy". Shepard's studies provide experimental evidence for this musically relevant aspect of tonal structure. In his paper, Shepard asks this question: "Why one might wonder, has it taken psychologists so long to come around to a musical approach to music?" (p. 155).

Auditory Memory

One of the basic tenets of information processing theory is that there are limits on basic perceptual capacities. This is referred to as the "magical number seven" problem in a classic paper by Miller (1956). His well known generalization is that the limitation of the human capacity for categorical identification is seven plus-or-minus two categories. Research has demonstrated that this principle applies to short-term memory for music. It can hold only a limited number of tones. The average memory span is from four to seven tones (Pollack, 1952) for unrelated tones. However, in tests using "melodies" or notes combined into a meaningful configuration the short-term memory capacity increases to twelve or more notes (Lundin, 1967, p. 127). Serial positions effects for pitch memory as a function of melody length have been demonstrated by Taylor (1976) and Williams (1975). In other words, individuals remember best the first and last tones of a melody, but have more difficulty remembering the middle pitches of the melody. Subjects can remember a tone after several seconds have elapsed, but Deutch (1970) found that intervening stimuli affect memory for the pitch of tones. When students were required to discriminate between two tones with random tones inserted in between, performance deteriorated as the number of intervening tones increased. When she used verbal intervening stimuli, there was little error. Deutch concludes that her results support the hypothesis that verbal and nonverbal information is processed by different cerebral hemispheres.

With regard to long-term memory, research indicates that music is stored as an abstract tonal image. Bergan (1967) compared pitch identification ability with imagery, as measured by an imagery questionnaire and with memory as measured by the Drake test of musical memory. His rationale was that subjects, in making pitch judgments, must use thought processes that do not depend on words, but rather there must be some kind of non-verbal representation of the sound--a tonal image--which is much like the actual experience of hearing and which acts as a standard against which to compare pitches being judged. His results were significant which, he concludes, indicates that the critical function of being able to make pitch judgments depends on an adequate internal representation of the sounds being judged.

In another study by Deutch (1972), she observed that the tones of a chord can be played in different inversions (a different order) without destroying our perception of a chord as a chord. She suggests that "at some neural level, tones are represented in a single abstract octave" (p. 88). However, this "octave generalization" does not hold for melody recognition. She played Yankee Doodle in the right rhythm but allowed the notes to fall randomly into one of three octaves. Of 34 subjects, only four recognized the tune whereas others guessed songs like "Old MacDonald Had a Farm", "The Star Spangled Banner", "Dixieland", or "Swanee River". When she played it in its correct version all recognized it instantaneously. When she played just the rhythm of "Yankee Doodle" (with all pitches removed) there was a higher proportion of correct guesses. This suggests that rhythm is a very strong organizational factor in how we perceive and remember music. She also found subjects had little difficulty if they knew in advance what tune to listen for, presumably because we can match each tone as we hear it with our mental image of the tune if it is a familiar one (p. 119). Her studies provide insights into how we organize and store musical information. The octave-displacement experiment would also seem to demonstrate how the Gestalt factor of proximity operates in our perception of a melodic line.

In general, studies in musical memory are producing results consistent with more general current memory theories. However, Deutch's reference to the processing of verbal and non-verbal information in different cerebral hemispheres might, on the surface, appear to indicate that music is processed in the non-language hemisphere. Since some clarification of this issue is necessary, it is discussed briefly below.

Cerebral Dominance

In recent years scientists from several fields (physiologists and psychologists) have been analyzing the specific functions, processes, and modes of consciousness of the human brain. The characterization of the left hemisphere as verbal, sequential, logical, analytical and the right hemisphere as non-verbal, holistic, spatial, metaphoric, and intuitive has led to both research and speculation as to its relationship with musical and artistic activity.

One early experiment (Kimura, 1964) gave rise to the view that music is processed in the right cerebral hemisphere. A similar conclusion might be reached when considering reports such as that regarding the composer Ravel who had a left-hemisphere stroke at the peak of his career. He lost the function of language and other left-hemisphere activities. Although he could no longer read or write musical notation, his sense of rhythm, melody, style, and musical memory were unimpaired (Regelski, 1978, p. 7).

Recent research indicates that it is inaccurate to label musical perception as a function of just one hemisphere. The Kimura study used non-musicians as subjects, but many follow-up studies have compared results for musicians and non-musicians. When listeners' musical backgrounds and the nature of the musical task are taken into account, the results regarding cerebral processing of music become more complex. Gates and Bradshaw (1977) provide an excellent review of literature on the cerebral control of music and linguistic behavior. Investigation suggests the likely role of the language hemisphere in aspects of music perception emphasizing temporal order, duration, rhythm, and effector motor control. It is also suggested that there does seem to be a pattern of laterality differences depending on the type of processing required. In their words:

> Since different laterality effects are apparent as a function of subjects' training or adopted strategies, the way musical information is processed may be an important determinant of hemispheric mediation. One hemisphere should not be regarded as "dominant" for music, but each interacts with the other according to its own specialization. (p. 403)

Two studies reported by Gates and Bradshaw (1977) as well as a study by Cooke (1973) and another by Bever and Chiarello (1974) suggest that a difference exists between musicians and non-musicians in the cerebral processing of music. For trained musicians there is more left-hemisphere (analytic) involvement than for non-musicians who tend to perceive melody more as Gestalt (i.e. with the right hemisphere). According to William English (1979, p. 41), this certainly appears to indicate that "music training" shifts the brain's response from an holistic response to a sequential, linear, analytic one.

Educational Applications

The curriculum for music education has been created by individuals with music training. Usually they have a performance background in voice or on an instrument. Findings from psychological studies including aptitude tests and studies of perception, have been used as a springboard for decisions about curriculum content and for the formulation of specific tasks (objectives) considered vital to music learning (Colwell, 1970, p. 10). In preparing for the publication of his widely-known Music Achievement Tests (1969, 1970), Colwell examined eight published music texts ranging from grades three to eight, as well as curriculum guides and college level texts. Typical objectives extracted from these sources included tasks, such as recognizing meter, differentiating between melodic patterns, recognizing repetition and contrast, tonality, key change, chords, and identifying style. Colwell's achievement test is clearly task-oriented because it calls for specific auditory proficiencies such as pitch, interval, meter and major/minor mode discrimination, chord and cadence recognition and so on. Most of these tasks require verbal labelling. Similarly, Gordon's Iowa Tests of Musical Literacy (1970) require the student to identify basic as well as uncommon major, minor, and modal patterns and basic to uncommon duple, triple, and unusual rhythm patterns.

Another source of student music listening tasks is the report on music assessment conducted by the National Association of Educational Progress (NAEP, 1974). Their original set of objectives was developed by the Educational Testing Service (NAEP, 1970). It includes perceiving elements of music such as rhythm, harmony, melody, timbre, texture and these are stated in overt behavioral terms. Other similar lists pervade the educational literature. According to Heller and Campbell (1981) there seems to be some consensus that music education could profit from "a task oriented taxonomy of auditory perception" (p. 12).

Summary

In Chapter One, I stated that the musical response will depend not only on the nature of music, but also on qualities of the perceiver. What does the psychology of music have to contribute to knowledge about the qualities of the perceiver, the nature of musicality or the nature of the musical response? The differences among listeners have been described largely in perceptual terms and the musical response has been studied as a perceptual response. The term "musical aptitude" and "musicality" have been used interchangeably by psychologists and neither of them are equated with performance or achievement. The main ideas contained in this review of literature in the psychology of music are summarized below in point form:

1. The psychoacoustic model is inadequate in its ability to account for musical perception because the physical properties of sound do not correspond exactly to the perceptual experience of the recipient.
2. It is the fact that physical properties of sound fail to define the response that makes music possible.
3. Musical aptitude or musicality is a mental ability.
4. Mursell thought of musicality as an all-pervasive ability, not a collection of sensory skills. He believed emotional responsiveness is fundamental. Many believe his ideas were an impediment to research.

5. Extremely wide individual differences have been found in tasks involving pitch discrimination and in the ability to extract structural relationships from tonal sequences. Researchers often divide subjects into two groups--musical and non-musical for purposes of comparison.
6. The testing movement led to operational definitions of musicality. The Seashore tests equate musicality with basic sensory capacities. The unitary view sees musical aptitude as an analogue of the music itself. Capacities to perceive elements of music (rhythm, melody, harmony, timbre) are measured.
7. With the shift to cognitive psychology the distinction between musical and unmusical becomes in addition to the above, the matter of more or less efficient cognitive processing of musical information.
8. Research on cerebral dominance suggests that musicians and non-musicians may process music in different cerebral hemispheres. This raises the possibility that the experience of music might be quite different for different people.
9. It is clear that findings from studies in the psychology of music regarding perceptual processes involved in music have influenced the development of objectives in music education curricula.
10. "Perceiver characteristics" have been described only in terms of differences in sensory, perceptual, or cognitive processing capabilities.

Implications for Musicality

What concept of musicality emerges from the literature in the psychology of music? Musicality involves (1) auditory capacities which enable one to perceive the basic elements of music, and (2) the ability to perceive structural relationships in the music. I will term this the restricted definition of musicality. (This term is not intended to be derogatory but is used simply to contrast this concept with the broader concept to be developed during the course of the present study). The educational view which grows directly out of this psychological orientation is reflected in Carlsen's (1981) assertion that: "Music is a perceptual phenomenon. Its meaning (or purpose) is realized only insofar as its structures are discretely perceived" (p. 7). Statements of educational objectives include music listening tasks which emphasize the importance of the perception of musical structures.

Relationship to the Modes of Mental Functioning

Let us now turn to a consideration of the literature reviewed in this chapter in terms of Dabrowski's five modes of mental functioning (overexcitabilities). As yet, no attention has been given to the psychomotor mode. Musicality has been discussed as a sensory and perceptual event which would fall into the realm of sensual and intellectual functioning. In terms of the imaginational mode, the word "imagery" was used by Gordon to describe the three groups of subtests in his Musical Aptitude Profile. Researchers investigating auditory memory referred to the non-verbal representation of sound. Bergan called it the "tonal image" and Deutch spoke of the "mental image of the tune".

The emotional component was emphasized by Mursell who insisted that emotional responsiveness is an important ingredient in musicality.

Chapter Four will focus on musical development. In Chapter One, a distinction was made between "musicality" and the more inclusive term "musical ability", which includes what one is able to do musically. Since much of the psychological literature on musical development is concerned with musical abilities, it will be necessary, at the outset of the next chapter, to depart temporarily from the concept of musicality. However, at the end of Chapter Four implications of the developmental literature for musicality will be given.

CHAPTER IV

MUSICAL DEVELOPMENT

Developmental psychology reflects an interest in events which unfold over a considerable period of time and some psychologists are concerned not only with child development, but with development throughout the whole life-span. Theorists generally agree that human development is a process involving sequential levels, phases, shifts, or stages through which the individual passes during development. Davidson, McKernan and Gardner (1981) point out that the developmental approach also reflects the importance attributed to the work of Jean Piaget. They say that "a search for qualitatively different stages which all normal individuals pass through in a prescribed order, has become nearly endemic among investigators who work with children" (p. 301).

Lerner (1976) has identified the nature-nurture controversy as the "core conceptual issue" of psychological development. Most researchers agree that it is reasonable to accept the interactionist position which views development as a result of a rich interplay between both heredity and environment. They are now directing their attention to how heredity and environmental factors affect development rather than continuing to pose unanswerable questions about which or how much of each factor, contributes to a given trait. Referring to the interactionist view, Gardner (1978) has this to say:

> Nowadays nearly all scholars at least pay lip service to interactionist views. Yet, when it comes to controversial issues--for example, the factors determining an individual's intelligence--only a minority of researchers actually holds strictly to an interactionist perspective. (p. 253)

Gordon (1971) believes that the nature-nurture issue has probably had more direct effect on music education than any other single concept. It is important because it underlies what might be called the "elitist" versus the "democratic" approach to music education. Shuter (1969), another music psychologist, says that the question is not purely academic because "if musical aptitude is largely innate, ought the schools to spend too much time on the unmusical? So long as the supply of good teachers remains inadequate, shouldn't their efforts be mainly directed toward discovering and fostering the talents of the gifted?" (p. 90). If, on the other hand, it could be demonstrated that aptitude can be environmentally influenced, it would make more sense to teach music to all children. One of the main purposes for aptitude testing has been to identify talented pupils. Seashore was an ardent hereditarian as were many other psychologists of his time. However, even today, researchers continue to raise questions or make assertions about heredity and musical ability. Davies (1978) for example, suggests that some children actually dislike music and that "we may, in fact, be torturing some children by forcing lessons on them" (p. 23). Studies of musical development and learning are often used to defend the environmental side of the issue. Before turning to these studies, a few arguments for heredity will be reviewed briefly.

Music and Heredity

During the course of history many different writers have puzzled over human musical competence and even the existence of music itself.

From an evolutionary standpoint it is difficult to pinpoint just why musical capacities have evolved. Roger Shepard (1981) suggests that since music does exist in all cultures then musical predispositions or at least basic rhythmic-auditory capacities must have contributed something to survival. He goes on to say that the difficulty in identifying just what their contribution has been suggests that they have not been as essential as linguistic or spatial competencies. Therefore musical abilities might be expected to show greater variation among individuals than these more essential competencies. He compares musical abilities with color vision, which, although playing an undeniable role in aesthetic experience, plays a less crucial role in survival, "and is known to be subject to wide and indeed genetically determined individual variations" (p. 153). He has noticed extremely wide individual differences in his research. The developmental psychologist Arnold Gesell (1940) has also noted this variation in musical ability:

> Individual differences are perhaps more marked in aesthetic expression than in any other field of behavior. Greatest variation is shown in musical ability. A child of 21 months may sing songs accurately, while some adults never attain this ability. Lack of ability, unless dependent on physical handicaps, may not show itself during the preschool years, but giftedness in artistic expression may be detected very early. (p. 258)

Because musical ability and giftedness in music emerges at a very early age, there are many reports of musicians who sang before they spoke or began creating music in early childhood. Early in the century, a number of psychologists established the idea that musical talent is inborn by analyzing the accomplishments of child prodigies. One of the most intensive studies was done by Révész (1925) who was able to observe Erwin Nyiregyhazy for several years. This child's parents were musical, and according to them Erwin tried to imitate singing before he was a year old and by his second year could imitate melodies sung to him. By age 3½, although limited in his capacity for verbal expression, he had already created little melodies. At age 4 before taking lessons, he could play on the piano the music he heard and could also improvise. His musical memory was outstanding and by age 6, when his lessons started, he could read and memorize difficult melodies. Unlike many musical prodigies, he became a professional musician. According to Slonimsky (1948) only about 10% of child prodigies become adult virtuosi. Révész points out that such precocity is found only in musicians and does not seem especially dependent upon intellectual development. Shuter (1968) refers to some studies of so-called "idiot savants" who have musical abilities which show some similarities to those of child prodigies. They can often learn to play a tune by ear after hearing it once or twice, but their lack of general ability prevents them from developing their talent normally. Shuter refers to a study done in 1959 by Anastasi and Levee of a "high grade adult mental defective" with outstanding musical talent. He could hum tunes before he spoke, could play by ear and played the piano at rehearsals for a leading chamber orchestra. When listening he assumed a critical attitude and would not listen to anything but classical music played by experts. Shuter adds that "apart from his music he was lethargic and only had weak and short-lived affections" (p. 100).

Gardner (1973) states that "scholars generally agree that a large portion of musical ability or capacity is inherited" (p. 187). He suggests that perhaps the most striking evidence for this appears in the accounts of autism and musical ability. He cites a few examples:

> An 18-month old sang operatic arias though he did not develop speech until 3 years of age; a 2½ year-old child listened continually to phonograph records, but skipped over parts that used the human voice; two autistic children went on to become professional musicians despite deep personality and intellectual disabilities. Among 30 autistic children only one did not show a deep interest in music; and among another group of four autistic children one had extraordinary knowledge of recorded music, two were considered in the class of "musical genius" and the fourth had an "extensive repertoire of popular and classical music". (p. 188-189)

Gardner goes on to say that although the reason for this is obscure it seems that these children are reflecting a capacity which is primarily hereditary and which needs as little external stimulation as does talking or walking in normal children. He suggests further that it could be that musical ability is just as localized in the brain and as "primed" to go off as speech and motor activity with the difference that musical talent is restricted to a portion of the population whereas these other skills are universal.

Evidence for heredity has also been gathered through the study of talent in families based on biographical and questionnaire methods. Pratt (1977) and Gordon (1971) summarize the results of such studies. In general, if both parents are talented, the children will have high to medium talent but none will be poor; if parents are dissimilar, the children vary between the two extremes; but if neither parent is talented their children are not talented. Studies of talent in families can be interpreted to fit the environmental theory. Environmentalists also point to exceptions, such as Toscanini and Rubenstein whose parents were not talented. In addition, they emphasize the importance of early childhood exposure.

The biologist and geneticist Amram Schienfeld (1965) has investigated the background of 72 well-known musicians and his results generally support the role of heredity. He reported that many composers revealed their genius to the world at an early age. He does admit, however, that an unfavorable environment can suppress talent. He makes the point that the difficulty in applying genetic theory to musical talent is not with the theory of heredity as a principle, but with the psychological description of musicality in terms of traits that may be inherited. Pratt (1977), a psychiatrist interested in the inheritance of musicality, concludes, on the basis of his literature reviews, that "the scientific study of inheritance of musicality offers particular difficulties, and no firm conclusions can be reached at the present time" (p. 22).

The Research Literature

Developmental psychologists have done substantial research in the areas of physical, language, and cognitive development as well as socialization but their efforts have not usually been directed toward specific subject-matter fields such as music. Lerner (1976) points out that earlier in the century, researchers were primarily involved in the description and cataloguing of normative data with little concern for theoretical explanation. Their data "described typical behaviors or physical characteristics to be expected from specific groups of children of certain ages" (p. 5). Only a few psychologists, chiefly Seashore and his colleagues, attempted to collect data on age-related musical characteristics of children. Since then, dozens of studies which focus on particular musical competencies have appeared. Most of these studies have been done, not by developmental psychologists, but by other psychologists and music educators interested in perception, motor learning, conceptual learning, curricular innovations, and teaching methods. Many of these studies are isolated from each other and are not based on developmental theory. Most studies which are theory-based are associated with the Piagetian model. Very few longitudinal studies have been done. Investigators who do attempt to focus on development find it difficult to separate factors such as maturation and education. Since musicality as such has not been investigated, many of the studies below are only indirectly related to the musical response. In the research described below, there is an emphasis on studies which include listening (aural perception) and most of the research dealing exclusively with reading and performing skills is omitted.

Studies of Music Skills

Much of the research that has been concerned with development has been carried on with young children. Recently there has been a growing interest in infant development. As physicist Juan Roederer (1974) points out, the sense of hearing is one which starts functioning months before the child is born. Speigler (1967) found that infants less than three days old are able to discriminate surprisingly minute fluctuations of rhythmic pulsations. This, he believes, supports the hypothesis that the infant habituates to a rhythmic auditory environment prenatally. These studies, coupled with those showing that infants are responsive to many types of musical stimuli (Miller, deSchweinitz and Goetzinger, 1963; Simons, 1964) suggest that musical development begins at birth and perhaps prenatally. Two researchers, Michel (1973) and Moog (1976) have done longitudinal studies which begin their observations in infancy but follow musical development over a period of years.

Michel (1973) is attempting to identify realistic upper limits for achievement for each age. His research indicates that the first 6 months of life is the period of "learning to hear". The infant's overt reactions which he describes as "pleasure in hearing" develop noticeably during these months. At this time the infant learns to distinguish volume, can identify several timbres, and will sometimes listen to music attentively for up to half an hour. The first attempts at singing occur at the end of the first year. In the preschool years, vital foundations are laid by concentration and differentiation between musical stimuli. Individual differences in the timing of "singing/ speaking" attempts as well as the pace of further development depends upon environmental stimulation. Michel believes that potentials for achievement from infancy to the age of 9 have been underestimated. By the time children go to school they have developed the ability to hear music in the major and minor modes. Contrary to older views, Michel finds that both melodic and harmonic singing and listening develop from before school age given suitable practice. He is also finding that in the area of listening an understanding of traditional music and contemporary music do not necessarily follow each other, but can be developed simultaneously. Michel finds that musical ability manifests at three stages which follow each other in time. There are considerable time differences in the onset of these stages. He notes that the emergence of gifted individuals occurs very early in comparison with other areas. He believes that talent is normally due to active involvement in a musically stimulating environment. He concludes that the "peak of optimum achievement for musical reproductive abilities--their sensitive critical period--lies in the fifth or sixth years of life" (p. 19). It is at this age that the possibility of especially rapid and easy development of vocal and auditory abilities should be utilized.

Moog's (1976) research is based on observations, tests, and tape recordings of 500 infants and preschoolers as well as information from their parents. He has outlined stages in singing, listening, and movement. Although young infants react to sounds he does not believe they respond to specifically musical sounds until the time of the first smile, when music no longer increases arousal but has a calming effect. Between 4 and 6 months the baby is no longer calm but turns toward the music with an expression of astonishment or joy. Moog believes that by the age of 6 months, music may elicit an emotional response not merely a kinaesthetic one. At this age the baby may respond with overt movements followed shortly by responding with sounds. The child sings his earliest babbling songs before saying words. By 9 months the child can show dislike upon hearing music. During the last months of the first year the baby shows greater sensitivity to music as can be seen by the increase in number, duration, and intensity of responses. By 18 months 10% of children can match movements to rhythm for a short period of time. Around the age of 2 they begin to show the unexpected response of motionless, attentive, concentrated listening for several minutes. Although capable of responding with sound or movement, they sometimes choose to listen quietly. Movement-wise the most spectacular development is in the use of space and some children will dance themselves into a state of "ecstasy". Between the ages of 3 and 5 about 50% of children make spontaneous movements to music but by age 6, learned forms of movement (dance and singing games) are substituted. Between the ages of 2 and 4 babbling songs become more rhythmic and progress in singing occurs. However, the assimilation of the scale is a very slow process. One third of children at this age begin singing songs which resemble those sung to them. Most children are more impressed by words than pitch or rhythm and begin by imitating words of songs. The sequence--words, followed by words and rhythm and finally adding pitch is still apparent in the singing of children who are almost school age according to Moog. He believes that from this age onward, the developmental process cannot be described independently of the child's environment. Toward the end of his report he refers to the great individual differences that occur in singing and movement and he gives credit to both heredity and environment in accounting for these differences.

A few earlier studies of a longitudinal nature have provided information about development over a period of time. Jersild and Bienstock (1931; 1934) studied children 2 to 5 years old and noticed improvement in singing ability but only slight improvement in rhythmic responsiveness. More recently, Smith (1963) studied children over a 10-year period and his results emphasize the importance of early experiences for later development. In another 5-year study dealing with children from the ages of 6 to 12 years Petzold (1969) found that the greatest development of auditory perception occurs in the first two grades and for most tasks a plateau is reached by the age of 8 years. A number of studies indicate that young children, including preschoolers are capable of aural discrimination much more advanced than those normally expected or taught (Duell & Anderson, 1967; Fullard, 1967; Hair, 1973). Piper and Shoemaker (1973) indicate that without training, kindergarten children can discern many features in music which amount to a close approximation of objectives sometimes given for the primary grades, Romanek's (1974) study reinforces these findings.

Since music educators generally agree that the major objective of the music program should be to develop musical understanding and responsiveness, and since "understanding" is generally taken to mean "conceptual" understanding there is an emphasis in teaching and research on the child's development of concepts in music. A number of research studies concerning concept development have been based on the Piagetian model. Most of these studies involve the application of the principle of conservation to music tasks. The pioneering work of Zimmerman (née Pflederer) in this field is well known (Pflederer, 1964, 1967; Zimmerman, 1970) as well as her work with Sechrist (Pflederer & Sechrist, 1968; Zimmerman & Sechrist, 1970). Zimmerman (1981) explains how musical concepts are formed:

> Music learning begins with perception and from these perceptions are formed the concepts that underlie musical thinking. In my work I have stressed the dependency relationship between perception and concept formation. In any given field there must be a selective focus for one's attention. Then, internal operations of labeling, categorizing, and organizing follow. It is here that concept formation takes place. (p. 52)

Zimmerman is interested in Piaget's concept of conservation and his description of the individual moving from a perceptually dominated view of reality to a conceptual view. As Zimmerman explains, musical learning begins with perceptions of music and from these we develop musical concepts which enable us to think about what we have heard and to communicate our ideas through performance and notation. She points out that children and older beginners tend to fixate their perception on a dominant or biasing aspect of the music ("centration") such as the sound of an instrument to the exclusion of other musical information. This tendency results in systematic perceptual distortion--an inaccurate and incomplete survey of the total musical configuration--which conceptual thinking is later able to overcome (Zimmerman, 1970, p. 49). In order to appreciate certain aspects of music, it is necessary to be able to conserve--to abstract invariant qualities from music in the midst of various types of changes or alterations. She began by proposing analogous "conservation laws" that operate in the development of musical intelligence (Pflederer, 1967) involving such abilities as the identification of a melody when played on different instruments or at different speeds or the ability to appreciate transpositions and inversions of a tune.

The procedure used in a typical experiment is to present the child with a fairly simple musical stimulus, to alter it in systematic ways, and to note whether the child can retain and report accurately his recognition of the elements of the original stimulus. In an early study designed to test the conservation of meter, tone, and rhythm she found that 5-year olds were unable to conserve these elements and were therefore manifesting preoperational thought (Pflederer, 1964). Responses of most 8-year olds reflected an intermediate stage of conservation although some gave evidence of operational thinking. Some children arrived at correct solutions by clapping, tapping, counting, or singing to themselves which she interpreted as a manifestation of sensorimotor intelligence where action guides thought.

A later series of experiments has enabled Zimmerman to identify an ordering of difficulty by examining various kinds of transformations. Conservation of tonal patterns is easier than maintaining the identity of specific meter or rhythm patterns. Children had less difficulty identifying the invariant element with a change in instrument, tempo, or the addition of harmony than with a change of mode, inversion or rhythm pattern.

Most difficult to conserve were examples in which rhythm and harmony are varied simultaneously. In this group of experiments, a plateau of conservation skills was reached by the fourth grade level. Some other researchers have followed Zimmerman's lead. (Botvin, 1974; Foley, 1975; Jones, 1974; Larsen, 1973). Their findings are similar and support the idea that older children acknowledge certain identities among configurations that younger children do not seem to notice. The developmental sequence that pervade the findings in music-concept formation indicates that concepts develop in the following order: volume, timbre, tempo, duration, pitch, and harmony.

One difficulty encountered in research on musical perception and concept formation is the relationship between perceiving or conceptualizing and the possession of an appropriate label for the percept or concept. Young children have often not yet learned to apply words like "up", "down", "same", "different", "long", "short" to music. Researchers have found that even up to the fifth grade children confuse terms such as "high", "loud", "fast", "low", "soft", and "slow". They use words we normally assign to dynamics, for pitch and tempo and so on. Hair (1977), recommends that a substantial amount of training is necessary before children can use appropriate verbal labels for tonal direction. Zimmerman (1981) says that "teachers experience this difficulty in distinguishing between teaching a concept and teaching the meaning of a term that designates that concept" (p. 52). She believes that young children do not have adequate labels to attach to their emerging concepts. In her view "at a minimum, school music programs should enable children to talk about their music experiences with the same level of technical vocabulary that is characteristic of other fields" (p. 52).

With regard to musical aptitude, it should be noted that Gordon's Musical Aptitude Profile has been used to investigate the stability of aptitude. Several studies, using the MAP, attest to the early stabilizing of aptitude. MAP scores for grades four and older remain stable even with musical learning and practice intervening (Gordon, 1971). DeYarmin (1975) investigated stability of aptitude for even younger children. His 4-year study indicates that aptitude appears to be stabilized as early as the age of 6 years.

In general, perceptual skills, vocal control, and rhythmic skills have been found to follow a developmental sequence. With regard to rhythm, some contrasting results appear in the literature but there seems to be a developmental trend (up to a point) in the ability to maintain a steady beat. Groves (1969) reported that rhythmic training had no influence on the ability of primary school pupils to synchronize body movements with the beat of the music. He concluded that native ability seems more influential than environment and that such an ability is more dependent on age, maturation, and motor ability than on rhythmic training. Petzold (1969) noted that after the age of 9, rhythmic ability does not change substantially. Kuhn (1974) compared first and second graders to college students on tempo perception as measured by clapping performance and noticed that the children were as competent as the adults. Thackerey's (1969) research, which also looks at adult performance, confirms the idea that ability to maintain a steady beat increases little with age. He found some, but not a high relationship between rhythmic performance, rhythmic perception, and movement.

The Affective Domain

Most of the research in the affective domain centers on musical preferences and taste. Since musical preference is the topic of the next chapter, only a few comments will be made at this point. Petzold (1981) states that:

> For obvious reasons, only limited information is available with respect to attitudes, interest, motives, and needs and values of children of elementary school age. The difficulty of interpreting children's verbal responses to music, which are highly introspective and unclear, has led researchers to turn their attention to the music preferences and attitudes of adolescents. (p. 46)

"The importance of the affective domain in the teaching of music is generally unquestioned" according to Simons (1978, p. 16) who has conducted a review of literature. He finds, however, that research in the area is limited due to the elusive nature of this area of study. Zimmerman (1971) concludes, after reviewing findings in affective development that the "so-called" appreciation tests largely measure how well "the more primitive perceptual and memory functions have operated" (p. 22). She adds that musical taste is a manifestation of musical attitudes which develop through conditioning and education.

A more recent study (Greer, 1974) indicates that the fourth grade is a pivotal one for the formation of musical taste. This reinforces Petzold's conclusion that this is an important period for the acquisition of other musical behaviors. It has often been noted that whereas young children are impressionable, there is a decline in appreciation and positive attitudes with age. Wragg (1974) investigated reasons for the sharp decline of interest in school music between elementary and secondary school and suggests that perhaps inevitable maturational and developmental processes are involved, but also points to other sociological and educational factors which seem to account for this phenomenon. Nolin (1973), on the bases of his study, suggests that music educators may not only be failing to increase appreciation, but may be fostering negative attitudes.

Finally, musical or aesthetic responsiveness has never been investigated as such, even though it is generally held to be the primary purpose of music education. Leonard and Colwell (1977) in a review of literature in music education state that:

> Age levels for musical responsiveness have not been investigated; we know that children react to music almost from birth, but the reaction may not have any of the elements of musical responsiveness. Further, attempts at early musical training for skill may bring negative learning as well as, or in lieu of positive learning. Again, some learnings achieved at great expenditure of effort for one age may come about naturally at a later age. The paucity of research literature prevents us from drawing any conclusions in these areas. (p. 88)

Summary of Findings

In general research points to the importance of early experience for later development so it might be said that the timing of nature-nurture interactions should take place in early childhood for optimal musical development. A number of studies have identified sequential steps in the development of perceptual, vocal, and rhythmic skills. Researchers tend to converge on some point around the middle of the elementary school years as the age by which the musical abilities of most children have unfolded. Gordon and DeYarmin speak of the early stabilizing of aptitude, Petzold finds greatest auditory development during the first two grades, and Michel calls this a sensitive-critical period. A plateau for musical development seems to occur in the preadolescent years and children of this age are often found to perform as well as adults on many musical tasks. These developmental descriptions do not seem to apply to musically precocious children. Gardner (1973) sums it up this way:

> The average child is capable of competent musical performance and understanding at an early age, but may never progress significantly beyond the level reached by the close of his eighth year. His information processing capacity will increase somewhat, but his ultimate potential for rhythmic and harmonic sophistication should already be manifest at this age. With the gifted child, a different set of capacities seem to be at work which allows for much progress without noticeable training... It would be deceptive to contend that we understand the nature of these musical abilities, which, in the most illustrious cases, make an individual appear like a member of a different species, yet more deceptive still to pretend that these unusual capacities...do not exist. (p. 197)

Gardner suggests that perhaps the reason that prodigies appear most frequently in music is because of the formal nature of the medium. He ~~points~~ out that music is more self-contained, than painting. Gardner quotes Berger (1965) who wrote "the ear can develop independently, the eye can develop only as one's understanding of the object seen...thus the boy Mozart probably did play as finely as anyone else alive...Picasso at 16 was not drawing as well as Degas" (Gardner, 1973, p. 196). This is an important point. Music is more self-contained and it also appears that musical ability can be a self-contained ability. Although it is often found among people who are highly intelligent or gifted in other areas, it can be found among individuals who are retarded intellectually. Musical talent can be isolated from other areas of development.

Gardner has been involved in research in the arts for a number of years. He believes that by the age of 6 or 7, most children have a "working familiarity" with and have assimilated the general properties of the musical system. "What is lacking is fluency in motor skills, which will allow accurate performance, experience with the code, tradition and style of that culture, and a range of feeling life" (p. 197).

Discussion of Selected Issues

Several issues arise from the consideration of the research on development which has been reviewed in this chapter. The first has to do with the application of the Piagetian model to music. There is a sense in which the application of Piaget's theory seems inappropriate--or perhaps is only appropriate up to a point in music. Lerner (1976) makes a distinction which seems particularly relevant in this connection. He reminds us that Piaget's theory is a developmental theory of cognition, not a cognitive theory of development. Piaget "viewed cognition as a developmental phenomenon rather than viewing all development as a cognitive phenomenon" (p. 159). So the question becomes one of to what extent the study of cognitive development can illuminate the process of musical development and to what extent musical development involves processes which cannot be characterized as cognitive in the Piagetian sense. Even Piaget (1953), himself, drew a distinction between artistic and other aspects of mental development:

> Two paradoxical facts surprise all who are accustomed to the study of the development of the mental functions and aptitudes of the child.
>
> The first of these is that, very often, the young child appears more gifted than the older child in the fields of

> drawing, of symbolic expression such as plastic representation, participation in spontaneously organized collective activities, and so on, and sometimes in the domain of music. If we study the intellectual functions or the social sentiments of the child, development appears to be more or less a continuous progression, whereas in the realm of artistic expression, on the contrary, the impression gained is frequently one of retrogression.
>
> The second of these facts, which in part can be equated with the first, is that it is much more difficult to establish regular stages of development in the case of artistic tendencies than it is in that of other functions. (p. 22)

Gardner (1977b) points out that Piaget's interests were in those modes of cognition which lead to the development of scientific or logical thought. However, he believes that Piaget's claims regarding cognition in the scientific realm have misleading implications for the arts. "The very processes which Piaget discounts or minimizes are central in artistic activity: the ability to perceive details within a sensory modality, to retain sensory impressions, to value a sound _qua_ sound or a color _qua_ color" (p. 93). This is figurative rather than operative cognition. Gardner (1973) believes that "the development of operational thought is not a vital part of artistic development and may sometimes be inimical to it" (p. 305). He believes the perceiving system--the exercising of one's powers of discrimination--is especially important for the skilled audience member. Although training may help to sharpen perceptual powers, he believes that extensive exposure and practice seem essential for the refinement of the system. Operative thought only becomes necessary for "meta-aesthetic" tasks such as capturing artistic impressions in words and integrating these propositions into systematic presentation. With regard to artistic development, Gardner indicates that within a short time after the age of 8, developmental paths diverge with some individuals highlighting discriminating powers and perhaps the majority relying on their feeling system.

The second issue has to do with the declining interest in music which is characteristic of many individuals during later childhood and adolescence. Many writers have referred to this phenomenon. Wragg's research, cited earlier in the chapter, suggested that perhaps inevitable developmental processes are involved but also suggests educational factors may account for this retrogression. Gardner (1973) reports that during later childhood, there may be increasing sophistication or, alternatively, a "less desirable atrophying of aesthetic sensitivity" (p. 233). During adolescence the young artist may abandon creativity, regress significantly, or fully immerse himself in an art form. Gardner suggests that perhaps the emphasis in our culture on abstract thinking and logical reasoning has a thwarting effect on aesthetic sensitivity. However, he also mentions the possibility that the decline in aesthetic pursuits may antedate or even cause a shift to more abstract, logical thought. He adds "At any rate, assorted studies, including my own, have documented the extent to which the adolescent child appears handicapped in tasks requiring sensitivity to nuance and suspension of abstract thought" (p. 259).

Summary

The major ideas contained in the review of literature on musical development can be summarized as follows:

1. Individual differences in musical ability are extreme.
2. Giftedness in music emerges very early and is not well understood. Existing developmental descriptions do not seem to apply to gifted children.

3. Few studies use a developmental approach and most that do are based on the Piagetian model. The results suggest the following sequence for concept development: volume, timbre, tempo, duration, pitch, harmony. The appropriateness of the Piagetian model for aesthetic development has been questioned.
4. The relationship between perceiving or conceptualizing and verbal labelling presents a problem in research.
5. Researchers emphasize the importance of early experience in music and indicate that a plateau for musical development as well as the stabilization of aptitude occurs around the middle of the elementary school years.
6. Most research on musical development has been done with very young children. Many writers have noted the phenomenon of retrogression rather than further development among many children during later childhood and adolescence.
7. There appears to be little or no research on musical development during adulthood.
8. Music, because of its formal nature is a relatively self-contained art and it appears that musical ability can be a self-contained ability.

Implications for Musicality

The restricted or existing concept of musicality described in Chapter Three included (1) auditory capacities for discriminating music elements and (2) the ability to perceive structural relationships in music. To this description we can now add the notion of conceptualizing in music which underlies what is called "musical thinking" or "musical understanding". The importance of musicality, so conceived, is explained by Gordon (1971) "A human being acquires broad musical meaning from musical sound because he is able to perceive and then organize and conceptualize what he hears" (p. 60). He adds that "Basically we organize and conceptualize what we hear as musical sound in two ways, tonally and rhythmically. To the degree to which we are able to organize these two elements and conceptualize their interaction, we develop an aesthetic response to musical expression" (p. 61).

In Chapter One I stated that I would describe the existing concept of musicality and would identify what I consider to be the problem associated with this concept. The problem is that the prevailing view among music educators seems to be that the best or ultimate kind of musical response is that which is based on, and can be justified in terms of, an accurate perception of musical elements and understanding of music concepts. Tellstrom (1971) cites two writers of music texts who say that musical responsiveness can be successfully developed "only if the individual is led to an understanding of concepts contained in the structure of music" and he indicates that most publications seem to reflect the view that "the ability to express feelings and reactions can only be accomplished through an understanding of the basic elements of music" (p. 256). This line of thinking can lead to the view that children must understand, conceptually, what is happening in the music as a prelude to "appreciation" or in order to function musically.

The emphasis on the so-called "musical response"--one which is based on an accurate perception of the elements of music--is accompanied by a de-emphasis on other kinds of responses. For example, Leonard and House (1972) distinguish between "musical" and "unmusical" responses. The latter includes associating music with "images, specific feelings, memories, moods, and story scenes" (p. 99). In the literature, I have also encountered a description of a classroom situation in which childrens' responses were described as "wrong" because the children had attended to different structural elements in the music than the teacher intended. Can a child's response to music be "wrong"?

What I have identified as the existing concept of musicality represents an overly-narrow view of musical responsiveness and of what is to count as an "aesthetic" response. Such a view does not account for the many ardent music lovers who seem, to me, to be highly "musical" in that they are very responsive to music but who have never heard of the "concepts of music" and who have never learned to analyze its structure.

Let us now assess the literature on musical development in terms of Dabrowski's five dimensions of mental functioning:

Psychomotor

The development of psychomotor skills (rhythm, singing) was touched on but not discussed fully since the emphasis in this study is on the experience of the listener.

Sensual/Intellectual

Research on the development of auditory perception and concept formation was reviewed since these capacities are regarded as essential to musicality.

Imaginational

None of the developmental literature discussed in this chapter adds anything new to the understanding of music and imagination.

Emotional

The "affective" domain is considered to be important, but little is known about affective growth in relation to music. Age levels for musical responsiveness have not been investigated. Gardner suggests that what the young child lacks, in part, is a "range of feeling life".

During the course of the present study, the ideas of certain writers will be selected for further elaboration. In Chapter Three it was noted that Mursell emphasized emotional responsiveness. In later chapters I will return to the work of both Mursell and Gardner and their ideas will be described more fully. The research which has been reviewed in Chapter Three and Four has not addressed the question of emotional responses to music or musical preference. These topics will be examined in the next chapter.

CHAPTER V

EXPERIMENTAL AESTHETICS

The field of experimental aesthetics had its beginnings with the work of Fechner in the 1860's. Fechner, who was interested in the elementary determinants of "liking" and "disliking", proposed an "aesthetics from below" as opposed to the "aesthetics from above" of the philosophers. Research from then until now has centered on the question of preference. Fechner formulated specific methodological guidelines which have dominated the field ever since--with the aid, in more recent years, of increasingly refined methods of data collection and statistical analysis. During the last hundred years there have been many experiments in which indications of preference have been elicited from samples of subjects. Sometimes genuine artistic objects such as paintings or musical excerpts have been used, but just as often the stimuli have been simple, identifiable elements such as patches of color or isolated tones. Some of these studies have been classified under experimental aesthetics but others have been classed with other branches of psychology, education, or related fields.

Theoretical Contributions

Within the field of psychology, several theories have been used to account for the percipient's experience of art. The four major ones are psychoanalysis, Gestalt theory, information theory, and behaviorism.

Psychoanalysis

Freud and his followers apply the basic tenets of psychoanalytic theory to art and art experience. Briefly, human behavior is a product of unconscious needs of the id and superego restraints which are compromised and channeled into behavior by the ego. Art is based on subconscious and repressed impulses which contradict our moral, cultural, and civilized requirements. It is a symbolic outlet for unconscious wishes of a sexual or aggressive nature. Thus art, like other imaginative products--dreams, fantasies, jokes, fairy tales--is a vehicle of disguised expression for unfulfilled wishes. Psychoanalytic theory has been applied mostly to individual works of art and in the analyses of individual artists. Less attention has been given to the experience of the spectator, but the same concepts are used to explain his experience. For the spectator, art affords vicarious fantasy gratification for unfulfilled wishes in a sublimated form. The perceiver can identify with the "latent" content in art and project his unconscious strivings upon it without feeling guilty because the "manifest" content of art is socially acceptable.

Psychoanalytic studies focus on the relationship between "latent" and "manifest" content in art and the unconscious motives of the artist (or perceiver). The content of art is analyzed for the symbolism. Muller-Freinfels (cited in Vygotsky, 1971) gives some examples:

> Some psychoanalysts claim that whenever an artist draws the portrait of his mother, or represents his love for his mother in some poetic image, he expresses a fearfully concealed incestuous desire (Oedipus complex). Whenever a sculptor creates statues of boys or a poet sings the joys of friendship with young men, psychoanalysts immediately see extreme forms of homosexuality...reading these authors we get the impression that emotional life consists only of alarming prehuman instincts and urges, as if all concepts

> exercises in will, and so on, were dead marionettes with strings pulled by dire instincts. (p. 80)

Psychoanalysts emphasized content, but had little to offer about the formal or structural aspects of art. Freud saw a relationship between artistic form and the liking for orderliness and tidiness which he associated with the "anal-retentive" impulses resulting from bowel training. Silbermann (1957/1963) refers to Freud's comment about music:

> Moving away from philosophers and musicians, we come to Freud who tells us that listening to music is an undifferentiated projection of an anal significance: so that our most sublime experiences rest on what might be described as the basest manifestation of the human character. (p. 7)

Farnsworth (1969, p. 92) mentions some other statements about music made by psychoanalysts. For example, Montani held that minor modes, which contain the diminished third, express feelings of pain, chastisement, and suffering which characterize reactions to the castration complex. Mosonyi claimed that primitive, noninstrumental music signifies narcissism and that "good" harmonies signify "mass ecstasy". Farnsworth goes on to say that some of the symbols refer to "obvious" associations like certain rhythm patterns and sexual intercourse whereas in other instances only the analyst can see a logical connection.

In general, Freudians have little to say about musical experience. Farnsworth (1969) suggests that this may be because "their master had slight musical interest" (p. 164). However, it is perhaps more likely that music receives little attention because psychoanalytic theory deals almost exclusively with content. The psychoanalysts would have difficulty extracting "content" in the usual sense from music, for music is pre-eminently non-representational. It does not refer to objects, tell stories, paint portraits, or depict scenes. Music has been called the most formal of the arts because formal means and communicated contents are considered, by many, to be identical in music. Vygotsky (1971) states that the most "extraordinary flaw" of psychoanalytic theory becomes evident when applied to the "nonfigurative" arts: "How can it explain music, ornamental painting, or architecture where the language of form cannot be translated simply and directly into the erotic language of sexuality?" (p. 83).

Reimer (1970), referring to aesthetic theories (including psychoanalytic theories) which are heavily slanted toward the non-musical arts states that if they do offer insights into music, they do so only secondarily. He gives the example of Carl Jung's theory, which was "immensely fruitful of ideas about literature, poetry, and the visual arts, but which has little to say about music" (p. 14).

Gestalt Theory

Gestalt psychologists were primarily interested in perception. In contrast to the psychoanalysts they had much to say about form in art, but little to say about content. The main thesis of the theory, which was elaborated by Kohler (1929) Koffka (1935) and Wertheimer (1959), is that the whole is greater than the sum of its parts. It is a "form" or "pattern" and is perceived as such. Their experiments concentrated on demonstrating that the brain is not a passive receiver of information, but strives toward the perception of "good" gestalts. The meaning of "good" is not clearly defined but Koffka (1940) states that "perception tends toward balance and symmetry" (p. 261).

In the aesthetic realm, Gestalt-oriented psychologists emphasize the role played by perceptual organizing factors in determining the percipient's experience, how the perception of "bad" gestalts arouse tension, and in analyzing the effects of formal or structural aspects of art works. On the whole, the Gestalt tradition has concentrated on the visual arts. In music, the name of James Mursell (1937) is associated with Gestalt psychology. In his book, The Psychology of Music, he used the general categories made familiar by the Gestalt school to explain musical perception. Music, because of its temporal nature, confronts the Gestalt theorists with certain difficulties. It should be noted, however, that the laws of Gestalt perception have been applied to auditory as well as to visual patterns. For example, according to the law of proximity, elements tend to be grouped together according to their nearness to each other. If a drum is tapped, the listener will notice auditory groups emerging as a result of different time intervals between taps. An obvious example of a figure-ground relationship would be a melody against the background of an accompaniment.

One aspect of Gestalt theory differs from the rest of the theory because it touches on "content" in art. It is the concept of physiognomic perception. This is the idea that particular states or conditions of both human beings and some non-human objects are inherently expressive of certain qualities or emotional states because they possess the same kind of structure. Arnheim (1954) uses the example of a weeping willow which looks sad because "willow branches convey the expression of passive hanging" (p. 434). This "theory of expression" or physiognomic perception holds that the perception of emotional meaning is an integral part of the perceptual process, as non-mediated as the perception of a tone. This idea is directly related to

Mursell's (1937) assertion that "emotional responsiveness to music can manifest itself without any clear apprehension of the structural elements" (p. 324).

Information Theory

The original set of mathematical rules and concepts for the description of communication systems (Shannon & Weaver, 1949) has been applied to several fields including music and experimental aesthetics. The three main concepts are "uncertainty", "information", and "redundancy" and the theory itself is basically a system for quantifying the amount of information and uncertainty contained in a message (or a sensory stimulus). The term "uncertainty" refers to the probability of different events occurring. If a chain of events has many possible outcomes, uncertainty is high but if the outcome is predictable, uncertainty is low. Uncertainty refers to expected amount of information and is calculated before the choice is made. The amount of information in a message, on the other hand, cannot be calculated until after the choice is made. The amount of information can vary from zero to infinity (certainty to impossibility). If a message is totally predictable it contains no information, but if it is totally unpredictable it contains a maximum amount of information. The amount of information in a message is determined using a mathematical formula to calculate how many "bits" it contains. As Watson (1973) explains, if the message is one chosen from two equally likely alternatives, "then the amount of information acquired through the correct reception of it is one bit, or one binary decision's worth" (p. 293). The more information the message conveys, the greater the uncertainty. Finally, the concept of "redundancy", broadly speaking, refers to the repetition of elements within a message. It increases the length of the message, but there is less risk from noise or signal interruption.

A work of art is often thought of as a vehicle for the communication of meaning (a message) and its elements could be regarded as "signals". Some researchers in experimental aesthetics have used simple stimuli with mathematically induced degrees of information which could be manipulated by the researcher. Attempts have been made to replace verbal descriptions of style and structure with operational concepts and quantitative categorization of elements. Statistical analyses of works of art have been done in an attempt to describe styles in terms of information content, degrees of uncertainty, redundancies, and probability relationships. Hochberg and McAlister (1953) expressed the hope that through information theory, it might be possible to define and measure what Gestalt psychologists called "goodness of configuration".

Theoretically, it is possible to calculate the amount of information in an artistic message as well as to predict the probability of a response. Moles (1968) worked out an example of this process in music. He calculated that a simple, hypothetical melody containing 20 notes and lasting for about 20 seconds produces 56 bits of information or 2.8 bits per note, in terms of duration. He did a similar calculation for the intervals in the melody. They produced 51 bits or 2.55 bits per interval. He concluded that the total information rate is 2.8 + 2.55 bits per second. He assumed this was a classical melody and what he did, basically, was to find out how many times the possible notes (and intervals) usually occur (what their probability is) and then used this information to calculate whether this particular melody contained more probable or more "unlikely" notes.

Given the complex nature of melody and the nature of the human percipient, accurate predictions, using these mathematical methods, is virtually impossible. However, the basic concepts and ideas from information theory have been used to illuminate the communicative function of art and the nature of the response to art. The most extensive and widely-known explanation of the processes which create "musical meaning" is given by Leonard Meyer. He attempts to relate aesthetic reactions not only to certain elements within the music but to the sequences and dynamic developments within a work. He originally developed his ideas without any reference to information theory (Meyer, 1956). He subsequently saw striking parallels and equivalences in information theory. He explained these in an article written a year later (Meyer, 1957).

Meyer believes that emotion, and the meaning that gives rise to emotion, can come not only from extramusical associations (designative meaning) but also from the relations between musical elements (embodied meaning). Although there is a close interaction between the two his theory deals specifically with embodied meaning.

The meaning of music for an individual depends upon two basic things: (1) The structural characteristics of the music, and (2) the listener's experience with the given style of the music. Using many examples and detailed analyses of musical excerpts, Meyer explores the structural features of music and demonstrates how tonal events cause expectations, produce tensions and resolutions of expectations. He relates this to information theory. For example, if a single tone is played, then a great number of tones could follow with equi-probability. If two tones are played in sequence, then the number of tones which could follow is reduced to some extent. As more tones are added, and the relationship between them is established within the context of a particular style, then it becomes increasingly probable that certain notes will follow. In information-theoretic terms, if the music is highly organized so that possible consequents have a high degree of probability, and if the expected occurs, the information content is minimal. In a less predictable situation, information content is higher.

Embodied meaning is based on the idea that music occurs within the context of a particular style. A style, then, is regarded as a complex system of probabilities which is internalized in the mind of the listener. His familiarity with the style gives him a certain set of expectations upon which musical meaning is built. The listener's mind, operating within the context of the style, selects and organizes the stimuli which are presented. He builds up expectations but if they are disconfirmed, tension or frustration is experienced. Meyer (1956) states that "emotion or affect is aroused when a tendency to respond is arrested or inhibited" (p. 14). The composer has manipulated tonal material in expressive ways by using deviations, delays, resolutions and uncertainties so that from the first note on, the listener interacts with an everchanging sequence of expectations. He finds meaning in the arousal and resolution of expectancies and these can occur at different levels of complexity. An expectation may be rapidly fulfilled, delayed, or frustrated depending upon what is happening in the music. The trained listener may be able to discuss how the effects are created in structural or musical terms, but even the untrained listener may experience, as emotion, the same expectations and tensions that are built in by the composer. Referring to Meyer's theory, Child (1969) comments that "emotional meaning is regarded as one way of perceiving the syntactic meaning of the music and a technically trained hearer may perceive it in quite a different way" (p. 861). Meyer (1956) states that "whether a piece gives rise to an affective or intellectual experience depends on the disposition and training of the listener" (p. 40). There are a number of studies which deal with cognitive processing of music and which support Meyer's theory. (Long, 1977; Shepard, 1981; Simon & Wolhill, 1968; Taylor, 1976; Vitz, 1966; Williams, 1975). Radocy and Boyle (1979) refer to Meyer as the writer who has "bridged the gap between aesthetic theory and information theory" (p. 211).

Davies (1978) discusses musical preferences in terms of information theory. If a person finds that a piece of music is, for him, extremely predictable, it will contain little information and he will rapidly become bored with it. He will perceive it as a tune, but one which is very naive. For another person, who is less versed in the particular style, the same piece of music will contain more information. He will be less certain about what is likely to happen in the music and he will not be bored with it. If the events in the music contain so much information (are so original) that there is too much to absorb, the listener's uncertainty is total and he cannot "make sense" of the music. On the whole, individuals will prefer pieces of music which contain neither too much nor too little information.

Behaviorism

Within the behavioristic framework, Berlyne is recognized as the psychologist who has made important theoretical advances in experimental aesthetics. Speaking from a behavioristic perspective, he asserts that psychologists have come to recognize that behavior depends on biological processes and that a psychological study of art must include a search for the biological origins of art. Because of the influence of the Darwinian theory of evolution, psychologists realize that behavior depends on physiological structures that have evolved because of their contribution to biological adaptation. This does not mean that all of our behavior promotes survival but it means that processes underlying behavior must derive from characteristics that became part of our hereditary constitution because they conferred some "selective advantage on our ancestors". This, in his view, must apply to aesthetic behavior. "Until we have identified these characteristics and connected them with the requirements of biological adaptation...we can surely not feel we have understood aesthetic phenomena" (Berlyne, 1968, p. 6-7).

Berlyne (1972) refers to neurophysiological findings about processes in the nervous system underlying emotional states and identifies two currents of research which he believes are of significance for aesthetics. The first is the notion of a fluctuating level of "arousal" or "activation" which is a momentary degree of alertness, attentiveness, or excitement. Secondly, it has been found that animals will learn to repeat an act if it causes electrical stimulation of certain areas of the lower brain. So it appears that experimenters have located processes in the brain that govern reward and pleasure or what is called "positive hedonic value" (p. 118).

Berlyne goes on to discuss research in exploratory behavior in animals and human beings which includes behavior classed under headings like "curiosity", "play", or "entertainment". This "diversive" exploratory behavior seeks exposure to any event, regardless of content, which offers a pleasurable level of stimulation or generates a moderate "arousal boost". Postural changes (eye and head movements, sniffing) and locomotion are forms of exploratory behavior typical of animals, but human beings, because of manual, imaginative, and verbal capacities, gain access to "curiosity alleviating" or "optimally variable" stimulation by transforming portions of their environment. These activities are said to be carried on "for their own sake". Thus, Berlyne explains, the study of exploratory behavior merges with experimental aesthetics. Aesthetic behavior is regarded as a special case of exploratory behavior--it is largely a "highly elaborate kind of exploration" (p. 120).

Research on exploratory behavior has drawn attention to the motivational effects of what Berlyne calls the "collative" properties of a stimulus. These are properties which involve collation of comparison of elements within a stimulus. They include "surprisingness", "novelty", "ambiguity", "puzzlingness", and "complexity". These properties seem to determine whether exploration will replace other kinds of activities, how vigorous it will be, and how long it will last. Berlyne claims that these collative properties are the essential constituents of the form or structure of works of art. Berlyne's basic theoretical premises might be summarized as follows: Art artwork is a stimulus pattern whose collative properties give rise to "positive, intrinsic, hedonic value". Works of art effect a rise in arousal because of qualities such as novelty, complexity, and surprisingness, and this arousal may be pleasurable in itself because of the activation of the assumed "reward system". In other words it is pleasurable for its own sake, and not because it is a means to an end. Such an artwork is said to possess "positive hedonic value". There might also be a subsequent reduction in arousal because of patterning of stimuli. He hypothesizes that positive hedonic values are a function of arousal --through increases in arousal, or decreases when arousal has reached an uncomfortably high level (Berlyne, 1974, p. 8-12).

Most of the research with human subjects has investigated variations in preference along the simplicity-complexity dimension. (Berlyne, 1972, p. 121-122). It has been found that two groups of measures vary with complexity, but in different ways. The first group includes judgments as to how "pleasing" or "liked" or "preferred" a stimulus pattern is. Findings of these studies indicate that, in general, preference is an inverted U-shaped function of complexity. This has also been reported by Vitz (1966) and Walker (1973). It means that individuals have preferred complexity levels and that a stimulus with an optimum amount of complexity (neither too simple nor too complex) will be preferred. The second group of measures involves the "interesting-uninteresting" dimension. Amount of "interest" in a stimulus is measured by "duration of exploration" or how long a subject attends to a stimulus. Berlyne refers to a mechanism he calls the "arousal jag" which refers to the observation that although subjects have a preferred complexity level, they will sometimes pay more attention to stimuli of a more complex nature. In other words, subjects sometimes find increases in complexity to be "interesting" long after they have ceased to find them "pleasing". Thus, a person may find a piece of art interesting even though he does not especially like it.

It should be noted that much of the current research in experimental aesthetics uses artificial, statistically constructed stimulus material such as random polygons with a specified number of "turns" or statistically generated music. However, sometimes actual works of art or musical excerpts are used. Berlyne (1972) explains the significance of the complexity variable:

> Judged complexity has been found to reflect, often in an astonishingly precise and direct way, the number of elements in a pattern...This one variable determines reactions, both verbal and non-verbal, to a very large extent, at least when relatively simple, non-representational material is used. It has been found to retain a great deal of influence over them when reproductions of paintings and passages of genuine music are presented. (p. 122)

Berlyne's main theoretical contributions lie in his clarification of the relationship between art experience and arousal or curiosity evoked by structural features (collative stimulus variables). In terms of the response to art, it is reasonable that "interestingness" which he defines in terms of complexity, should be distinguished from "pleasantness" as a factor in experience. "Interestingness", however, although it may be a motivational factor, is only one determinant of "arousal" and this, even when combined with "preference" or "pleasantness" is not sufficient to account for the nature of art experience. How would Berlyne's theory help to distinguish art from humor, play, or other similar realms of human activity? Berlyne (1972) himself does not claim that his theory is a complete explanation of art experience. He points out that "The parts of aesthetic behavior that do not qualify as exploration consist of the reactions, internally or externally observable that follow the impact of a work" (p. 120).

Recent Developments

Several years ago Berlyne (1968) wrote an article in which he expressed his disappointment in the contributions of experimental aesthetics. Referring to the hundred years of research beginning with Fechner, he stated that most studies have focused almost exclusively on verbal reactions which boils down to asking people what they like. He feels that these responses should be correlated with measures of non-verbal behavior such as psychophysiological changes. He points out that in other fields of inquiry a writer feels bound to begin by reviewing established knowledge and building on it, but in spite of decades of research in experimental aesthetics, the writer feels entitled to make a fresh start as if nothing had been settled definitely. There is little feeling that one must begin where others left off.

However, since about 1960, the field has been characterized by new concepts, techniques, and approaches which Berlyne and his followers term the "new experimental aesthetics". Berlyne is recognized as its founder and chief proponent. His basic theoretical approach has been described above. However, in a recent description of the new experimental aesthetics, he notes that Leonard Meyer was discussing factors which can be specified either in terms of collative properties or in information-theoretic terms. Here the two approaches converge (Berlyne, 1972, p. 123). In general, the new experimental aesthetics utilizes the methods of empirical science, analyzes artworks in information-theoretic terms, focuses on collative properties of aesthetic stimuli, and studies both verbal and nonverbal behavior with reference to stimulus properties. Radocy and Boyle (1979, p. 209) indicate that some studies use the "synthetic" approach--the laboratory method where variables are isolated for manipulation and study. Others use the "analytic" approach which investigates reactions to actual works of art or musical excerpts. The authors state that McMullen, another proponent of experimental aesthetics, believes too much of the research reflects a one-sided psychoacoustic approach and that there is a great need for more studies of a psychomusical nature. Berlyne (1974, p. 18) notes that both approaches are necessary but he acknowledges that the synthetic (laboratory) approach has dominated both old and new experimental aesthetics. Independent variables are usually structural characteristics (collative properties) and their effects are often evaluated within an information-theoretic framework.

Summary

Four main theories have been advanced to explain preferences, but it is generally agreed that psychoanalytic theory has contributed little to an understanding of musical experience. The new experimental aesthetics is largely a combination of Gestalt, information theory and behavioristic approaches--all of which relate the structural characteristics of music to musical responses.

The Gestaltists demonstrated that the listener hears not individual elements of sound, but patterns or configurations. The whole is greater than the sum of the parts and it is the listener (perceiver) who makes it so, for he organizes or "makes sense" of the sound. He organizes tones into perceptual units that are as "good" as conditions allow. Meyer's work indicates that one of the conditions that will affect the listener's ability to make sense of the music will be his familiarity with a particular style. Within the context of a style the listener has certain expectations and finds meaning or responds emotionally through the arousal and resolution of these expectations. With practice, a person can come to change his musical expectancies or internalized probability system. Berlyne, who has examined preference in terms of the complexity dimension, believes there is sufficient evidence to hypothesize that people prefer music which provides an intermediate amount of information and also that subjective complexity increases as a function of information content. In summary, an individual prefers music that is at an optimal complexity level for him.

This view of musical preference is related to the findings of research done in the past in a different context. These studies investigated the effects of familiarity and repetition on musical preferences (Getz, 1963; Krugman, 1943; Schoen & Gatewood, 1927; Washburn, Child & Abel, 1927). The Washburn, Child and Abel study exemplifies the approach typical of these studies. They had subjects listen to eight orchestral selections, each played five times in succession. The selections ranged in style from very serious to light popular and each excerpt was one minute long. Subjects were required to record degree of pleasantness of each repetition on a 5-point scale. They found that with repetition, popular music became less pleasant and serious music became more pleasant. Popular music reached a maximum amount of pleasantness in early repetitions, classical music during later repetitions. Except for very serious compositions, musically unsophisticated subjects could endure more repetitions than could musically sophisticated subjects before a decrease in pleasure occurred. In general, the studies found increased pleasure with increased familiarity, but only up to a point. The style of music also had an effect.

To summarize the view of musical preferences based on experimental aesthetics, it can be said that an individual prefers music which is at the appropriate level of complexity for him. The more familiar the music, or the style of the music, the more the listener is able to anticipate what is about to happen in the music. If a piece of music is initially below his preferred complexity level (too simple) increasing repetitions will only result in a further decrease in pleasure. If the music is initially overly-complex, it may, with increasing familiarity become less complex (subjectively) and begin to reach the preferred level of complexity for that individual. Since the musically sophisticated listener can more quickly organize the musical material, he will become more easily bored with music that is structurally simple (such as some popular music). It is likely that there could be a change in a person's preferred complexity level over time as his musical sophistication increases.

Studies of Musical Responses and Preferences

The Affective Response

Music can bring about a spectrum of responses ranging from the simple reception of auditory sense data to experiences, which in sensitive individuals, are so overwhelming and transcendental that they defy description. Although kinds of affective reactions are almost limitless, the psychologist's understanding of them is limited, due, in part, to the methods that have been used to study musical responses.

Some of these methods have already been described in this chapter under the heading of "experimental aesthetics". Other approaches to affective responses have been of two main types: (1) physiological measures and (2) the study of mood responses.

Physiological Measures

It has been known for many years that musical experiences lead to physiological reactions of the autonomic nervous system. The composer Berlioz's description of his reactions, as reported by Schoen (1940, p. 103) included muscle contractions, increased blood circulation, violent pulse rate, trembling, numbness of the hands and feet and partial paralysis of the nerves controlling hearing and vision. However, since the physiological states in many different emotions are quite similar it is important to know how these bodily reactions are related to the affective response as experienced psychologically by the listener. Of the many studies which have measured physiological responses to music, very few have attempted to examine their relationship to the affective response of the subject, therefore, they provide little insight into the nature of the individual's experience. The research done between 1880 and 1950 has been summarized by Schoen (1927, 1940), Lundin (1967), and Farnsworth (1969). Recent research has been reviewed by Dainow (1977). Most studies involve the presentation of a musical stimulus as the independent variable and measures of physiological rates as the dependent variable. The most frequently used dependent measures have been respiration rate and amplitude, heart rate, and galvanic skin response (GSR). Some studies have measured pilomotor response (movement of hair on the skin), gastric motility, patellar reflex (knee-jerk), electroencephalography (brain waves), and electromyography (muscle tension).

A few investigators have attempted to relate physiological reactions to verbal reports. Lundin (1967, p. 157) cites three such studies. In 1888, Féré found that when subjects were indifferent to the music, GSR ratings were minimal. If the music was reported to be pleasant or unpleasant, GSR ratings were greater. In 1934 Phares also reported that a greater than average GSR was accompanied by a corresponding stronger affective reaction. In 1934, Dreher compared GSR ratings for musically trained subjects and subjects who were untrained and reported lack of interest in music. Both groups exhibited changes in GSR ratings while the music was played, but the responses of the untrained group were far less intense and less differentiated. The trained group also reported a greater variety of affective responses.

Hyde (1927) studied the effects of different kinds of music on cardiovascular responses of music lovers, people who were indifferent or insensitive to music, and people of different nationalities and training. She found that as a rule, those who appreciated classical music also showed a lowering of physiological functions measured. She used the "Toreador Song" from Bizet's Carmen, which tended to increase physiological functions but exerted no influence on listeners who were insensitive to music or those who did not care for the song. Sousa's "National Emblem March" caused, in general an increase in cardiovascular activity, but the records of those who "lacked a fondness for music" remained unchanged.

Harrer and Harrer (1977) have drawn some conclusions about autonomic responses based on their extensive and detailed investigations. They say that the autonomic response depends on (1) the reactivity of the autonomic system which, in turn, is influenced by constitution (predisposition), age, physical fitness, state of health, and temporary factors such as fatigue, drinking coffee, and so on; (2) emotional reactivity; (3) the subject's attitude toward music, its importance in his life, and his immediate attitude toward the music used in the testing situation. They show a diagram of autonomic responses of a subject listening to the same piece of music in two different ways. When the subject was "completely involved" in the music, there were marked autonomic changes. When the same piece was critically analyzed (i.e. without emotional involvement) by the same subject these autonomic changes were not demonstrable. They suggest that "in individuals with a musical background and training, the aesthetics of a piece of music may be experienced even more pleasurably by an objective rather than a subjective approach" (p. 203). They go on to say that music may lead to an autonomic reaction even when it is not consciously perceived as in sleep, with background music, and "functional" music provided in places like factories and elevators. In addition, the nature and extent of autonomic responses depend on the kind of music presented. Also, different subjects give different autonomic responses to the same music. Some music, like dance music and marches, produce predominantly motor responses and some other kinds are more likely to elicit cardiovascular or respiratory responses. The authors report differences in reactivity between performer and listener. In conducting, for example, the highest pulse rates do not occur at moments of great physical effort but during passages which produce the greatest emotional response. They measured the pulse of Herbert von Karajan while he was conducting, and later when he listened to a taped performance of the music. Maximum pulse rates occurred during parts of the music he found most profoundly touching. When he listened to the tape, there were similar tracings, but the changes were greater while he was conducting. The authors comment that "in contrast with responses to music heard, these powerful reactions cannot be suppressed by deliberate detachment" (p. 206). Finally, they report on the effect of tranquillizers. When they administered tranquillizers within the limit of certain dosages, they observed an almost complete suppression of music-induced autonomic responses without any concomitant reduction in the emotional experience. When larger doses were given, both autonomic and emotional responses were suppressed. They conclude that "there is reason to believe that some individuals will thus be able to give themselves up to the aesthetic pleasures of music in an undisturbed manner" (p. 216).

In Dainow's (1977) review of the literature regarding the physiological responses to music, he reports that there is no support for the notion that heart rate varies with the tempo of the music, that summarizing research on respiration is difficult because of the variety of experimental conditions, and that, in general, physiological research to date presents a very confusing picture. There are many methodological problems involved, many autonomic responses are different for different individuals, and, he believes, it would be inappropriate to make predictions or generalize about the affective response on the basis of physiological reactions.

Mood Responses

Three main methods have been used for gathering information about mood responses: (1) rating scales, (2) adjective checklists, and (3) the semantic differential.

Studies using adjective checklists have revealed some similarities in responses. Schoen and Gatewood (1927) presented several musical selections to 32 subjects on two separate occasions. They concluded that "a given musical selection will arouse a certain definite reaction and will arouse the same reaction on different occasions" (p. 151). Gatewood (1927) used a list of 12 adjectives to elicit mood responses and also examined the influence of melody, rhythm, harmony, and timbre on mood responses. He concluded that mood reactions were dependent on definite musical elements. Hevner (1935, 1936) developed an extensive adjective checklist which was used for much subsequent research on mood responses. She used 67 adjectives grouped in eight clusters and arranged in a circle. The mood quality expressed by adjectives within a cluster are similar and as one proceeds around the circle mood similarity decreases until the opposite side of the cluster is reached. From this point back to the starting point, the mood similarity increases. She found a general consistency among subjects in the adjectives checked while listening to music. She did some follow-up studies to examine the mood effects of certain elements of music. She reported that firm rhythms were described as "vigorous and dignified", flowing rhythms as "happy, graceful, dreamy, and tender", dissonant harmonies as "exciting, agitating, vigorous" and so on (Hevner, 1936, p. 268). Her research revealed that responses tended to be much the same for subjects of all kinds whether trained or untrained, intelligent or less intelligent.

The semantic differential technique, which measures subjects' responses by using bipolar adjectives separated by a 5- or 7-point scale, has been used less frequently. Edmonston (1966) used dichotomies such as "happy-sad", "light-heavy", "humorous-solemn", and concluded that rhythm was a primary factor affecting response. Furthermore, responses did not vary significantly with sex or training. Eagle (1971) used the semantic differential technique to answer several questions including whether existing mood of the subject before listening affects his mood response. He found that pre-existing mood did affect the response to music.

Farnsworth (1969) indicates that research on mood responses has shown "beyond the possibility of doubt that synonymous words will be employed with some consistency to describe the character of much of our Western music whenever the listeners are drawn from roughly the same subculture" (p. 80). In general, the degree of agreement about moods established by music is little affected by differences in sex, tested musical aptitude, intelligence, amount of training, or age level if above the sixth grade.

One problem with this kind of research is that the moods attributed to music represent forced judgments based on adjectives used by the investigator. It is not known whether these judgments correspond to inner reactions that would have occurred without the requirement to choose between or among given alternatives. If one is forced to judge music as either happy or sad it may not have any relevance to ordinary musical experience. A person could identify music as "happy" or "sad" while remaining emotionally neutral himself. Furthermore statistical methods, which range from simple frequency counts to factor analysis, obscure individual differences among subjects.

Child (1969, p. 863) describes a very different kind of experiment done by Frances to test the impact of the emotional effects of music. He tried to determine whether musical accompaniment affects movie viewers' interpretation of what they see. The attention of subjects was directed to the movie not the music and inquiry indicated that they were not aware of being influenced by the music. When film extracts were played for different experimental groups using dissimilar music, the music clearly influenced judgments about emotions suggested or expressed in the film. This unwitting influence of music on the interpretation of what is seen, when music as such is not the object of inquiry, suggests that the emotional meanings of music can occur spontaneously and probably in a manner that is not fully conscious.

There appears to be substantial agreement on the mood attributed to different passages of music (even though we cannot be sure that the listener necessarily "takes on" the mood of the music). A few studies have found a similar agreement with regard to the sensory dimension. For example Brown, Leiter and Hildum (1957) conducted a study to see if sensory metaphors applied by music critics would be consistently applied by college students (uninformed about music criticism). They asked students to use certain metaphors to describe voices heard in operatic recordings and better than chance agreement was found. The baritone was often termed "dull", "coarse", "dark", "rough", "heavy", or "thick", the tenor was "thin", "bright", and "light" and the soprano "coarse", "soft", "thin", and "light".

It is clear then, that the moods of music are learned by people in a culture without technical training or intensive, analytical listening instruction. Psychologist William Kessen (1981) suggests that because of the wide exposure of children to music (through radio, records, and television) that by school age, children have formed the "perceptual schema" for the conventional structures contained in our music as well as the associated moods. As he puts it, "All of us, including the children, recognize chase music, killer music, and kissing music" (p. 359). Trained and untrained listeners alike differ little in their grasp of simple musical structure. There is little reason to doubt that individuals would differ radically in their understanding or grasp of complex harmonic and polyphonic structures in music. However, the question of interest here is whether such understanding makes a difference to the nature of the emotional or aesthetic response. Many studies reviewed in this chapter and Chapter Three have focused on either grasp of structure or grasp of mood. Those that attempt to relate the two (Meyer and Hevner) have shown that the structural elements of music give rise to "emotion" or to a choice of different descriptive adjectives. From this type of research we learn very little about the nature of this reaction however--about qualitative differences in the reactions of people to music.

Musical Preferences

Earlier in this chapter, preference was discussed in relation to the characteristics of music. Berlyne's work demonstrates how collative variables and complexity levels can influence preferences. Meyer related musical enjoyment to the delay of musical expectancies which promote pleasure through the ultimate dissipation of frustration.

There is a need to expand on this topic for several reasons. The first reason is related to Dabrowski's theory. When he outlines the various levels of what he calls the "aesthetic attitude" he refers to artistic preferences at different levels of development. (1974, p. 155-158). The present discussion does not attempt to place preferences at different levels, but the information given below is relevant to Dabrowski's ideas about preference. A second reason to expand on the topic is that laboratory studies give a very limited understanding about influences on preference. What other factors affect musical preferences?

Factors Affecting Preferences

A number of researchers have reviewed studies of musical preferences and each provides a summary of variables which have been studied. Radocy and Boyle (1979) give several reasons for individual preferences including "musical characteristics such as tempos, orchestral colors, and lyrics, extra-musical associations ('Darling, our song...') and societal pressures." They add that "there are group preference tendencies; they are not solely a matter of individual choices" (p. 222). Wapnick's (1976) review categorizes variables into musical, situational, and subject. The musical category includes the effect of music stimulus components. Situational variables are chiefly environmental and include repeated hearings, community attitudes, peer influences, socioeconomic relationships, educational level, and musical training. Subject variables are intelligence, personality, music aptitude, sex, and age. Other similar lists suggest factors such as mood of subjects, preceding listening experiences, degree of media exposure, stereophonic or monophonic presentation, physiological conditions, basic attention, memory, and so on. Boyle, Hosterman, and Ramsey (1981) conclude that although many variables influence preferences, "the diversity of methodology in research design does not allow even tentative conclusions to be drawn regarding the effects of the many variables" (p. 49).

It is important at this point to make a distinction between a certain individual's reaction to a particular piece of music in a given situation, and his overall "taste" for music in a broader sense. As Farnsworth (1969) points out, a listener is not a machine and music's effects are not invariant. For example, we cannot assume that music invariably arouses, in the listener, the same moods or emotions that are attributed to the music. Reactions are not totally predictable. Farnsworth comments that: "psychiatrists and clinical psychologists would no doubt rejoice if all they needed to cure the schizoid, the depressed, or the maniacal were access to a variety of compositions whose 'moods' had previously been carefully catalogued" (p. 79).

Farnsworth uses the word "taste" to describe the overall attitudinal set one has toward music. He regards "preferences" not only as momentary pleasures, but as "overall typical sets of emotionally oriented attitudes, perhaps even including strivings for appreciations not yet gained" (p. 97). He sees, for example, a difference in the taste of a person who is striving to appreciate Bach, but who does not yet enjoy his music, and the person who simply casts Bach aside as a creator of meaningless scamperings up and down the keyboard. Dabrowski, too, uses the word "preference" in this broader sense.

Because of the perplexing diversity in the preferences of people, it is often said that "there is no accounting for taste". Meuller (1958) claims that this cliché is based on a fallacious translation of a Latin proverb which should really be translated as "there is no disputing of tastes" (p. 100). Meuller believes that tastes can be accounted for but cannot be proven correct or logical in the natural science sense. This is because the criterion of truth differs from that of science. He says that aesthetic objects are judged according to cultural norms which exist in our heads. Since it is generally agreed that some people have more "aesthetic taste" or "sensitivity" than others, various researchers have attempted to measure this "variable". Two standards have been used in many studies. One is the extent to which an individual's preferences agree with those of his peers. The other is the degree to which preferences agree with connoisseurs or expert judges. Typically, statistical averages are used as when, for example, averaged judgments of non-expert groups are compared with averaged judgments of experts. Results are inconclusive. Sometimes correlations are found and sometimes they are not. Child (1969) draws an interesting conclusion in his discussion about whether connoisseurs agree. He refers to the argument which states that ordinary people might agree about art because their reaction is to the superficialities of the work and is based on cultural stereotypes. The artistically sensitive person, on the other hand, reacts to the complexities of the object and with his full individuality. Therefore, equally competent observers might interact with art, but a different experience will emerge for each. Child reviews some research which shows that agreement among connoisseurs is far from perfect, but the "agreement is demonstrable by statistical analysis and is such that averaging the opinion of a group of connoisseurs can give...an extremely stable standard" for research purposes (p. 882). (In this connection, Dabrowski would say that those connoisseurs at high levels of emotional development would be in close agreement. Averaging their judgments only obscures the individual differences among them.)

Farnsworth (1969, Chapter 6) devotes a chapter to research that might shed light on two opposing views about taste. One view is that taste is whimsical and thus without a pattern of any sort. The other view is that taste obeys some absolute and unchanging laws. He polled members of the American Musicological Society in

1938, 1944, 1951, and 1964 and asked them to rank many composers in order of perceived eminence. The top five, which remained relatively stable across the years, were Bach, Beethoven, Mozart, Haydn, and Brahms. He did similar studies polling other groups such as members of symphony orchestras and college students. He has also done research to see which music is most often included on symphony programs, in music texts, in encyclopaedias, and similar sources. Because "perceived eminence" and "enjoyment" are not necessarily the same thing, Farnsworth conducted studies to test the correlation between the two. He found them to be positively correlated, but "their degree of relationship varies with the musical sophistication of subjects, being higher with the more sophisticated" (p. 110). On the basis of his studies as well as those he reviews, Farnsworth concludes that taste is not whimsical. It is lawful. However, it does not follow any absolute natural science or metaphysical rules. It is culture-bound.

Some investigators have examined preference in relation to personality variables. Many of these do not deal with music. Child (1965), for example, attempted to determine characteristics of individuals whose preferences were most concordant with connoisseurs in their ratings of paintings. He found degree of agreement to be correlated with these traits: (1) independence of judgment; (2) tolerance of complexity; (3) regression in the service of the ego (i.e. the ability to escape temporarily from the usual logical restraints of adulthood and take an interest in playful, imaginative things); (4) and, to a lesser extent, tolerance of ambiguity, ambivalence, and unrealistic experience. His results are interesting because these characteristics are often held to be important for artistic appreciation.

Two personality variables which have been investigated in connection with musical preferences are close-mindedness and introversion-extroversion. Mikol (1960) found that when open-and close-minded subjects heard conventional compositions (by Brahms or Saint-Saens) for the first time, they seemed to show equal amounts of enjoyment, which increased on repeated hearings. However, a relatively unconventional piece by Schoenberg, while disliked by both groups, was disliked much more strongly by close-minded subjects. The open-minded subjects expressed less distaste on repeated hearings, but the dislike grew on the part of the close-minded subjects. Another study by Zagona and Kelly (1966) recorded reactions of high-dogmatic and low-dogmatic individuals to an abstract film of lines and colors synchronized with jazz. Low-dogmatic individuals were more accepting of the film.

A study by Keston and Pinto (1955) investigated the relationship between preference and eight variables with a group of college students. Preference was significantly related to musical training, music recognition ability, and introversion. The preference was for classical music. In general, studies of music and personality variables have been isolated and independent. It is difficult to form any generalizations. Child (1969), after reviewing some studies of personality and the arts, indicates that it appears that people "like works of art that represent or embody their own manifest characteristics" (p. 902). He adds that Cardinet offered the same generalization in connection with visual art.

Social Influences

Dabrowski describes three factors which influence development. The Second Factor consists of environmental influences and pressures which come from others individually or in groups. In terms of development, the Second Factor is strongest at level two which he calls "unilevel disintegration". He describes the influence of the Second Factor at level two in these words:

> Susceptibility to social opinion and the influence of others. Behavior is guided by what people will think or say or by the need for recognition and approval... Values are internalized from external sources: parents, church, government, authority of the printed word. Acceptance of stereotyped ideas and values is a function of the need to conform as there is no internal structure to generate and support non-conformity. Relativism of values and ideas. (Dabrowski & Piechowski, 1977a, p. 41)

The studies reviewed below provide examples of the influence of Second Factor on musical judgments and preferences.

A well known study done by Asch (1956) demonstrated how peer influence affects subjects' judgments about the lengths of line segments. Using Asch's model, Radocy (1975) demonstrated conformity for sensory judgments of pitch and loudness. Subjects for the study were 136 university music students. Four confederates, who always responded before the subject, gave correct answers during control conditions, but incorrect answers two-thirds of the time during experimental conditions. They found that these subjects, who were trained musicians, would defy their own (correct) perceptions rather than disagree with their peers.

A common phenomenon regarding performance evaluation was demonstrated by Duerksen (1972). Subjects heard two identical piano performances on tape. Half the experimental subjects were told that the first performance was played by a professional and the second by a student. The other half of the experimental subjects were told the opposite. The control subjects heard them simply labelled "one" and "two". The alleged professional performance was rated as better musically and technically by both groups of experimental subjects.

In an earlier experiment by Rigg (1948) musical preference was altered by introducing propaganda associating certain music with Nazi Germany. The subjects heard the compositions first without comment. Then one group received favorable information, one received unfavorable information, and a control group, no information. The largest gain in enjoyment on rehearing the music was in the group that had received the favorable information. The least gain in enjoyment occurred in the unfavorable-comment group.

Turning to educational settings and school age children, many examples of social influences can be found. Abeles and Porter (1978) investigated what they considered to be a common kind of stereotyping that occurs in music--the association of gender with instruments. There is a predominance of males in bands and females in string orchestras. These researchers studied the sex-stereotyping of instruments at the elementary level. Their results suggested that gender associations are widespread throughout all age groups and may be a dominant factor in instrument selection.

Another study, based on the idea of imitation, was done with a kindergarten class and replicated with a preschool class. In order to encourage the child in self-expression and creativity, young children are often asked to move freely to the music and interpret it in their own way. In the experiment done by Flohr and Brown (1979) children were asked to move to the music under two conditions--one with blindfolds and the other without. The results indicated that peer imitation significantly influences "expressive" movement.

Most earlier studies of musical preferences used classical music, but the development of separate "popular music cultures" during the last 25 years has had far-reaching effects on musical preferences. Radocy and Boyle (1979) point out that before 1950, popular music was aimed primarily at adult, white middle-class culture. Country-western, black and folk music had more of a regional appeal. Now, however, popular music is more fragmented and music known as "country", "soul", and "folk" has acquired national audiences. "Rock" has become the youth music. Radocy and Boyle have noticed, when visiting classrooms, that group musical preferences narrow with advancing grade level. Children in the primary grades will usually listen to a variety of styles without undue protest. However, when these various styles are presented to children in grade four and beyond "students will cover their ears, cringe, and look around to ascertain that sufficient numbers of their peers are doing the same thing. The preferred music becomes rock" (p. 230).

So pervasive is the influence of rock music, that researchers are even beginning to classify their experimental pieces not in terms of different styles, but in terms of "rock" and "non-rock" music. A study was done by Greer, Dorow, and Hanser (1973) to demonstrate that teacher approval influences preference. In their study of instrument discrimination training, 39 second and third graders changed from a pretest preference for rock music to a no posttest difference between rock and symphonic music. A similar result was obtained for nursery school children. A study by Dorow (1977) replicated these results for children in fourth and fifth grades. Another study by Greer, Dorow, and Randall (1974), investigated the rock versus non-rock listening of children from nursery school to sixth grade. Their results clearly demonstrated preference for rock music with advancing grade level. The National Assessment of Educational Progress (1974) which examined attitudes toward music, also found increasing preference for rock music for children from 9 to 17 years old.

In a study done a number of years ago, Johnstone and Katz (1957) found that preferences of teenage girls were influenced by their peers. Popular girls conformed more closely to neighborhood norms than did less popular girls.

Social pressure does not stimulate all people in the same way. Inglefield (1974) attempted to relate preference conformity to some personality variables. He found an overall tendency among ninth graders to change expressed preferences to conform to the preferences of those acknowledged as peer leaders. Using personality measures, he found the greatest conformers to be those students who were more dependent than independent, more other-directed than inner-directed, and more in need of social approval.

Summary

In this summary a few points will be made with regard to (1) affective responses and (2) preferences.

Affective Responses

1. It is generally agreed that Freudian psychology does not provide significant insights into the nature of musical experience.
2. There is some evidence that increased physiological responses accompany strong affective reactions, whether positive or negative, and that physiological reactions are minimized when a person is indifferent to the music. Autonomic reactions have been reported even when the music is not consciously perceived, such as during sleep.
3. Dainow concludes that research on physiological responses presents a confusing picture and that it would be inappropriate to generalize about the affective response on this basis.
4. With regard to mood responses, there is a great deal of consistency in the choice of adjectives to describe moods in music. Mood effects occur without musical training, and arise spontaneously, and probably in a manner which is not fully conscious.

I would like to make one further comment regarding "mood". We ordinarily think of mood as a certain receptive state a person happens to be in, not as something which moves us or stirs us emotionally. I interpret "mood" as a relatively undifferentiated state--a general "overall feeling". To choose one adjective to designate the mood of a piece of music could only refer to a general impression--an overall state, but could not describe the complex series of emotional reactions which sometimes occur as the music unfolds. An adjective to describe a mood gives no real insight into the qualitative aspects of the experience of the listener.

Preference

1. Musical structure has been explored in terms of Gestalt principles, information theory, and collative variables and these properties have been studied in relation to preference. These studies report that preference is a function of structural complexity or amount of information in the music.
2. There are a great many variables which affect a certain individual's preference for a particular piece of music on a given occasion. Such responses are far from being totally predictable.
3. If we think of preference more broadly as an overall emotional attitude (sometimes called taste) then, according to Meuller and Farnsworth, preference can be accounted for more easily.
4. Social influences are regarded as an important determiner of preference in this broader sense. It is difficult to draw conclusions from personality studies. With regard to art in general, both Child and Cardinet have suggested it appears that people like works of art that embody their own manifest characteristics.

Implications for Musicality

At the end of Chapter Four, musicality was defined in terms of auditory, perceptual, and conceptual capacities. Gordon stated that to the degree to which we can perceive and conceptualize the interaction among musical structures, we develop an aesthetic response. Experimental aesthetics investigates musical responses and preferences. What is the relationship of musicality, as defined above, to the material in the present chapter? This is a difficult question. If we consider the work of Berlyne and Meyer, and the studies on the effects of familiarity and repetition, we might expect more "musical" people to prefer music of greater structural complexity. Some studies from physiological research report a more intense and differentiated response among "trained" than among "untrained" subjects and yet one study demonstrated that a musician could deliberately detach himself (minimize physiological response) and adopt a critical attitude. Mood responses require no training. With regard to preferences, Gordon (1971) reports the conclusions of two researchers:

> To the extent to which one wishes to believe that forced preference on the part of students is a worthwhile objective, it should be remembered that, as Evans clearly points out, musical preference does not presuppose musical understanding. Duerksen, in another study gives credibility to this conclusion when he states that he found no practical relationship between students' preference for a piece of music and their intelligent musical understanding of that composition. This was true even for students who had musical training. (p. 114)

According to this research, preference does not seem, necessarily, to be related to musicality as defined above, but what can be said about the nature of the response itself? Aesthetic experience is more than a taste judgment reflected in a preference statement. Knowledge about preferences may contribute to, but can never provide a complete understanding about the nature of musical experience.

Chapter Six marks the beginning of the second phase of this study. Up to now, musicality has been conceived as an analogue of music. It has been assumed that musicality, which is a characteristic of a person is, in a sense, synonymous with the music itself. The musical person is one who can perceive clearly the structures of music. This view of musicality leads to a situation in education which is reflected in a recent description by Sidnell (1981):

> I think most of music education is based on the house of music knowledge, which has many rooms. We talk about rhythm, melody, harmony, form, and color; but we do so without reference to people. Most views of music education I have read focus on process in relation to musical substance. In many ways that is significantly appropriate, but we have, to a large extent, overlooked the object of our efforts. (p. 175)

What Sidnell says about education applies also to much of the psychological research that has been done in music. It might be said that the remainder of this study represents my attempt to "put the person back into the psychology of music". In the next phase of this inquiry, a different approach is taken to the literature. The concepts provided by Dabrowski's theory are used to direct a search through literature from diverse sources. In other words, the starting point for the creation of a broader concept of musicality is the human being, and the modes of mental functioning described by Dabrowski.

CHAPTER VI

MUSIC AND THE OVEREXCITABILITIES

A consideration of music and musical responses in terms of the five forms of overexcitability leads to a broader understanding of the nature of musical experience. The overexcitabilities correspond to basic modes of experiencing or dimensions of mental functioning. As modes of functioning, all five are present in rudimentary form in every individual (Dabrowski & Piechowski, 1977a). The term "overexcitability" is used to denote a response that is above average in intensity.

In this chapter, each overexcitability is treated as a dimension of mental functioning and a number of possible responses to music are described for each dimension. Although in actual experience the five modes combine in various ways, there is an attempt, in this chapter, to keep the descriptions separate for the sake of clarity and convenience. However, a problem arises in the attempt to deal with these separately. Each form of overexcitability has its lower and higher manifestations, but only at lower levels of development do the overexcitabilities have a tendency to occur in isolation from each other. At higher levels, the psychomotor and sensual forms are increasingly controlled and transformed by the imagination, intellect, and especially the emotions. During the process of development, internal conflict plays a major role in inhibiting or controlling primitive impulses. The conflict represents a higher level of functioning because it is more complex than the impulse it inhibits. Psychological transformations move from external to internal control and from impulse to reflection. Dabrowski and Piechowski (1977a, pp. 112-118) outline the lower and higher manifestations of psychic overexcitability. For example, the psychomotor mode manifests in restlessness, acting out, impulsive actions and a need for frequent changes at a low level. However, at a high level, it provides other modes with "executive power" and is associated with planning and organizational abilities. Sensualism at low levels involves "epidermal" attitudes of like and dislike as well as superficial responses and relationships. At higher levels it adds warmth and cordiality in expressing empathy and manifests also in aesthetic sensitivity and responsiveness to the beauty of nature. Imagination, at a low level, is associated with acting out or identifying with externally defined roles such as "I am the boss", theatrical gestures to enhance effect, and also can manifest in confabulation or facility for lying. At higher levels it is associated with the differentiation between "higher" and "lower" in creativity, imagination, and art, and in dreams or visions of the ideal. Intellectual overexcitability ranges from skillful manipulation of information at a low level to intuitive intelligence, great awareness, and the search for the meaning of knowledge and human experience at high levels. Emotional overexcitability ranges from irritability, lack of control and constant need for affection at low levels, to states of elevated consciousness and profound empathy at high levels.

This chapter focuses on musical experience within each of these five dimensions and also includes some examples of "lower" and "higher" responses within these dimensions. Several authors have discussed musical responses in terms of levels and their views are incorporated into this chapter. However, the relationship of musicality to personality development itself will not be explored in the present chapter. Instead, the emphasis will be on the five modes of experiencing and the range of responses within each dimension.

Much of the literature reviewed in earlier chapters described the experience of music as a sensory-perceptual-intellectual event. One very fundamental aspect of music and musical experience has only been touched on--the rhythm of music and the rhythmic response. The psychomotor mode of experience is one of movement and at higher levels is associated with organizational ability. In music it is the rhythm which provides the feeling of movement and one of its primary functions is to provide order and organization of music so that it is comprehensible. Because of the close and obvious relationship between rhythm and the psychomotor mode they are discussed together below.

Rhythm and the Psychomotor Mode

Rhythm

Rhythm, in its broadest sense is a structuring of time and it is, therefore, a characteristic not only of music, but of most processes in the internal and external worlds that unfold over time. The word "rhythm" has been used to describe events in nature such as the movement of waves, the behavior of animals and human beings, and physiological processes. In its most basic form, rhythm is a universal and easily grasped phenomenon. Most definitions of rhythm involve the notion of periodicity or repetition. Rhythm is an ordering or patterning of time based on the appearance and reappearance of something with temporal intervals between. As an aspect of music, rhythm is often regarded as the most essential component. Gaston (1968), for example, states that "when the musics from all cultures of the world are considered, it is rhythm that stands out as most fundamental. Rhythm is the organizer and the energizer" (p. 17).

Psychologists have studied rhythm both as a stimulus and as a response. As a stimulus, music contains many rhythmic structures which organize and shape the elements of music into a comprehensible entity. As a response, rhythm is both perceptual and motor. A number of theories have been offered to explain the rhythmic response. These can be broadly classified into four groups: (1) instinctive, (2) physiological, (3) motor, and (4) rhythm as a learned response.

The Instinct Theory

If a series of identical notes or any sounds is carefully performed so that each sound is exactly the same in pitch, duration, and volume, human beings insist on hearing these sounds in groups of two, three, or four and believe they hear a slight accent at the beginning of each group. According to the instinct theory, this grouping of a uniform series of sounds is done instinctively. The theory postulates the existence of an innate rhythmic response. One of its chief proponents, Carl Seashore (1938/1967) makes the point that the ticking of a clock is periodic, but not rhythmic unless it is made so by the subjective grouping of the listener. This subjective rhythm is so deeply ingrained in us that we have an irresistible tendency to group sounds. According to Seashore, this instinctive tendency is a biological principle of preservative value as is the tendency to move rhythmically:

> If one does not know where to put his hands or foot in the next movement, he is ill at ease and will be inefficient in

> the movement; but if his movements may be foreseen and even forefelt, and an accompanying signal sets off the movement without conscious effort, there results a greatly lessened expenditure of energy, a more effective action, a feeling of satisfaction. Anything that accomplishes these ends in the life of a species will tend to become instinctive, to develop a tendency always to move in rhythmic measure; and when our movements are not actually divided into objective periodicity, we tend to fall into a subjective rhythm. We cannot have adequate perception of rhythm without this motor setting. (p. 143)

Seashore adds that rhythm involves the whole organism. It involves not just the ear or the fingers, but the two "fundamental powers of life"--knowing and acting. This is why it indirectly affects circulation, respiration, and other bodily processes in such a way as to arouse agreeable feeling:

> Herein we find the groundwork of emotion; for rhythm, whether in perception or in action, is emotional when highly developed, and results in response of the whole organism to its pulsations. Such organic pulsations and secretions are the physical counterpart of emotion. (p. 144)

Seashore points out that rhythm is one of the foundation structures in all sports and other motor skills such as typewriting or chopping wood. So, both in music and outside music, rhythm is not necessarily set up by the objective situation but "always represents an active organization on the part of the performer" (p. 148).

Some Gestalt psychologists also consider the tendency to organize stimuli rhythmically to be innate. Valentine (1962) has shown experimentally that this tendency is so strong that it can cause most subjects to ignore slight accents that really are there. It is this human reaction to time--the tendency to break it up into comprehensible units or patterns--that provides the origin of the sense of rhythm in music, according to this theory.

The instinct theory has been criticized by Mursell (1937, p. 153) and Lundin (1967, p. 117) because they say it is contrary to research findings. They believe that the rhythmic response involves some learning. Studies of the rhythmic abilities of children indicate that they are often rather poor at keeping time. Casual observers may think children are responding rhythmically to music, but Mursell believes that these spontaneous movements are probably the result of the stimulating effect of tone itself. The most often quoted study in this connection is the one carried out by Heinlein (1929). He had children march in time to the music while he monitored their responses by means of electrical contacts embedded in the runway on which they marched. Of eight children, only one was marching in time to the music.

This argument does not dispose of the instinct theory because many behaviors which are regarded as instinctive (in animal studies) do not emerge until the organism has reached a certain developmental stage. Furthermore, the fact that a child (or adult) cannot synchronize body movements to a rhythmic pulse does not necessarily mean he cannot perceive the pulse. On the adult level, this spontaneous ordering of identical sounds into groups with recurring subjective accents appears to be highly prominent.

Physiological Theories

One explanation for the appeal of rhythm comes from the psychoanalysts who claim that the pleasure of rhythm results from its connection with the rhythms of sexuality. This theory aroused great resistance on the part of musicians and other artists, but it was not really a new idea. Historically, Darwin and his school preceded the psychoanalysts in linking rhythm with sexual life. The Darwinists discuss the importance of rhythm in the process of natural selection and refer to "dances of love" performed by birds during courtship. In 1879, Berg suggested that music developed out of the howls of monkeys in heat who perform rhythmical movements and hit trees rhythmically in preparation for the sexual act (cited in Kreitler & Kreitler, 1972, p. 149). They point out that psychoanalytic theory may explain some responses:

> The erotic theory of rhythm may account for a variety of phenomena. It might explain, for instance...why accelerated or fast rhythms lead to orgies and ecstasies in various so-called primitive cultures, and why jazz and the varieties of rock music provoke excesses of excitement in the reportedly less primitive peoples of Western culture. The acceleration of tempo up to a climax followed closely by steep relief would be taken to reflect the dynamics of sexual intercourse. Similarly, the common tendency to impose rhythm on so many activities and perceptual phenomena would be interpreted as due to the desire to derive quasi-sexual pleasure from the neutral or the necessary. (1972, p. 149)

They go on to say the theory would be less convincing in its explanation of the tenseness of markedly slow rhythms. These would be recorded as the result of repression of sexuality. However, they feel that a crucial argument against the erotic theory is that sexuality is not the only organic process characterized by rhythm. In fact, rhythmic periodicity is at the core of all organic life.

A much more prevalent view is the theory that the heartbeat serves as a basis for rhythm and tempo in music. Jacque-Dalcroze (1921, p. 79-82) was an avid supporter of this view. His eurhythmics school provides rhythmic training for children to develop muscles, improve bodily health and for the aesthetic value of teaching self-expression. According to this theory, the heartbeat and other bodily processes provide a clear idea of time because of their regularity. Breathing and a regular gait provide models for the division of time into equal proportions. Only through reiterated experience of the whole body can consciousness of rhythm be acquired. The eurhythmics school pointed out that music which is faster than the normal heart rate sounds hurried, and music which is slower than the normal heart rate sounds slow or sluggish.

Another theory which associates the rhythmic response with recurring physiological processes is that of Robert McDougall. It is described by Mursell (1937, p. 155). McDougall's claim is that the feeling for rhythm is due to a basic and primitive rate of nervous discharge. He gives, as examples of his idea, the typical compulsive movements found among some mental patients, where a certain automation, such as flexing the arm may be repeated hundreds of times. The explanation McDougall suggests is that nervous discharge occurs in waves and that the rate of frequency of these waves determines the rate of compulsive movements. It also determines the sense of rhythm possessed by "normal" people including musicians. Thus, the fundamental conditions of rhythmic experience are based on the laws of periodicity of functioning in the nervous system.

The physiological theories of Jacques-Dalcroze and McDougall are criticized on the grounds that the relationship between automatic bodily processes and conscious rhythmic perception or voluntary muscle control are not at all clear. Mursell (1937), although he recognizes that the normal "true beat" of music falls within the approximate limits of the normal pulse, states that "there is no mechanism known to psychology by which the heart beat gives us our sense of timing, or indeed affects our conscious experience in any direct way at all". He adds that such theories also overemphasize the factor of regular occurrences. This is necessary, to some extent or there would be no sense of rhythm but in actual music this regularity is extremely flexible and the perception of rhythm is "always the flexible organization of perceptual units" (p. 157). Authors of recent publications are still quoting Mursell on this point. Radocy and Boyle (1979) say that evidence to support the heartbeat theory is entirely lacking and they cite one study which, they say, refutes the theory. This experiment was done by Lund in 1939. He asked college students to indicate the proper tempi for two popular songs by adjusting a lever on a Duo-Art reproducing piano. He found no relationship between students' preferred tempi and the measured rate of physiological processes. He concluded that the theory that the "true beat" of music is conditioned by recurrent physiological processes had no support from his data. (Radocy and Boyle, p. 78).

However, these theories cannot be entirely discounted. Feder and Feder (1981) report that "it is commonly noted that the musical time unit in almost all cultures appears to be a standard that is roughly equal to the human heartbeat, between 70 and 80 beats a minute" (p. 131). Experimental psychologists have carried out investigations to establish durations of time or "time constants" which govern the perception of events. For example, Fraisse (1964) has established that a duration of .75 seconds appears to be a psychic constant which corresponds to the duration of the process of perception and he quotes many other studies that establish the same interval as a rate-controlling constant of the brain's mechanism. This is the average length of time needed to perceive a situation and act on it. These findings can be expressed in terms of metronome markings used for tempo indications in music. McLaughlin (1970) has done this. Tempi that are described by subjects as moderate or neutral fall into the range of M.M. 50 to M.M. 95 (50 to 95 beats per minute). Curt Sachs (1953) who is a musician, has stated that there is, and must be an average normal time which he calls "tempo guisto". He claims that without this concept of normalcy we would be unable to rate a tempo as fast or slow. This "tempo guisto" is, according to Sachs, about 76 - 80 M.M. which falls within the same range identified by experimental psychologists. McLaughlin (1970, p. 36-37), after reviewing various sources of information, concludes that musicologists, experimental psychologists, and neurologists have reached striking agreement that "there exists in the minds of most people, a concept of 'tempo guisto' at around 80 - 90 beats per minute, and anything faster or slower than this creates a tension". He adds that actual preferred tempo may vary from one individual to another and that obviously such differences may arise from physiological or mental causes.

For centuries, men have been aware of the striking contrasts in the human response to stimulating, invigorating music as opposed to soothing, sedating music. This observation has influenced the selection of music for so-called "functional" purposes--in therapy, in industry, and for rituals and ceremonies. In these situations, music is often used to control behavior. Gaston (1968) gives several examples. He says that rhythm is the chief energizer--"the primitive driving factor in music". Rhythm which uses detached, percussive sounds stimulates muscular action. Music for dancing and marching usually has definitive, repetitive rhythms and the more strongly accented the music the greater the apparent physical response to it. Gaston refers to the music of preliterate people which we think of as being percussive in nature and which calls up visions of strenuous physical action. Applause at concerts is usually louder for stimulative (fast and loud) music than it is for softer, slower music. Gaston discusses the response to melodic music where rhythm is at a minimum and sounds are nonpercussive and smooth. A typical slow movement by Mozart, for example "actually curtails physical movement. It seems to induce a contemplative response...makes no demand for physical activity but rather induces esthetic fantasy" (p. 19). Slow, regular monotonous rhythms are used for hypnosis and in lullabies to soothe infants. Gaston reports that the "startle" response occurs only to percussive sound. Kreitler and Kreitler (1972) hypothesize that periodic life processes may provide criteria for judging tempo as optimal, fast or slow, but they believe the actual perception of rhythm may depend on different processes. They claim that this hypothesis is unrelated to those of Dalcroze and McDougall who suggest that the perception of rhythm depends on organic, internal processes. They point out that observations about the effects of slow music are not as clear as they are for fast music. Sometimes slow music is disenergizing or relaxing, sometimes it is experienced as calm and dignified, and at other times it can be tension-laden. For example, a dance tune played too slowly is irritating. With regard to stimulative music, however, they report that:

> There is a lot of evidence that accelerated rhythms arouse tension. In various cultures a gradual acceleration in the rhythm of songs, beat of drums, magical incantations, and movements is used to arouse the participants in simultaneously performed activity, be it dance, work or battle,

> to great excesses of enthusiasm and violent outbursts of energy. These may sometimes result in orgies, trances or self-mutilations--that means, in peaks of tension which can be relieved only through vehement release acts. (p. 148)

The Motor Theory

This theory holds that rhythm is dependent on the action of the voluntary muscles which are under the control of the higher nervous centers and whose activities are capable of being trained. The pleasure of rhythm derives from the pleasure of free and facile bodily movement. Human beings are capable of being stirred by rhythm and producing rhythm because they have a neuromuscular system which can be trained to keep time and itself is so complex that it can respond to great rhythmic complexities. The experience of rhythm essentially is the feeling of one's own ordered voluntary muscular activity.

This theory is generally recognized as one of the most plausible, but it is not accepted without reservation. First, the feeling of muscular movement is acknowledged to be important in connection with a sense of rhythm. Almost everyone has experienced the urge to tap or keep time to music in terms of bodily movement. Marching, dancing, and many kinds of physical work are easier when accompanied by rhythmic music. However, we are often conscious of rhythm in a musical passage without making any overt muscular responses. Mursell (1937) believes that we probably dance or keep time to the basic beat or pulse but the total rhythm contains much more than the beat. Perhaps a skilled dancer can "realize" much more of the total rhythmic content, but he doubts that even a dancer could translate the totality of a complex rhythm into movement. However, a person may grasp the entire rhythm very adequately as a listener or performer. Therefore, he feels that the motor theory is not sufficient to explain the whole experience of rhythm. He maintains that "the ultimate foundation of rhythm is to be found in mental activity" (p. 162).

According to Boring (1942), many research studies demonstrate that auditory rhythms tend to be accompanied by kinesthetic accentuation. One often quoted study is that of Ruckmick who presented subjects with both auditory and visual patterns (flashes of light). Subjects gave verbal accounts of their experiences. He found that while the initial awareness of rhythm required the presence of kinesthesis, it was possible for this feeling of muscular movement to die out and for the rhythm to be perceived entirely as an auditory or visual pattern. This means that the perception of rhythm can take place without accompanying kinesthesis. He also found individual differences in the amount of kinesthesis involved in the perception of rhythm. (cited in Lundin, 1967, p. 121).

Leonard Meyer (1956, p. 79-80) points out that physiological and motor adjustments accompany listening to music just as they accompany other acts of attention. He speaks of "anticipatory motor attitudes" as forming part of the preparatory set the listener brings to the listening situation. He believes that motor attitudes also play a part in perception and response to music. However, he believes that the precise role played by motor behavior in the perception of music is problematic and complex. On the one hand it seems clear that almost all motor behavior is a product of mental activity yet somehow motor behavior plays an important part in facilitating and enforcing the musical aesthetic experience. It often contributes to making the listener aware, either consciously or unconsciously, of the progress and structure of the music. Some listeners become aware of certain qualities in the music partly in terms of their own bodily behavior. "Such listeners might be said to objectify and give concrete reference to music, to perceive it through their own motor responses, and perhaps this in part accounts for the emphasis which has been placed on motor responses" (p. 82). He adds that since motor behavior is a product of, and runs concurrent with mental activity, it requires no special, independent analysis.

Henson (1977a, p. 14), in his discussion of some of the neurological aspects of musical experience, reports that it is generally agreed that rhythm depends on subcortical activity and its full appreciation requires an intact motor system on at least one side of the body. However, fine discriminations made by the auditory system depend on cortical function. With regard to listening to music, he says that performers in an audience will more deeply share the motor activities of the players and singers, but all the listeners have motor responses. At a public concert, these responses are rarely overt.

The Rhythmic Response as Learned

Lundin (1967, Chap. 7) believes that the rhythmic response is learned and that it cannot be accounted for solely by any of the above theories. He calls his theory a "modified motor theory" which views the rhythmic response as more than voluntary muscle movement. It cannot be explained only in terms of muscles or only in terms of mental activity. To Lundin, it is both a perceptual and a motor response. Since the entire organism is usually involved, it is difficult to separate the two. The perceptual side is emphasized when we listen to a rhythmic pattern or analyze a piece of music for its rhythmic content. The motor aspects are evident during performance or when moving bodily to music. The two are interdependent and listening can involve motor responses which are overt or implicit. The rhythmic response involves both perceptual organization of stimuli and discrimination among these stimuli. He maintains that this ability is dependent upon learning.

Discussion

I would like to make a distinction at this point. It seems, to me, that a response to rhythm does not necessarily have to be a rhythmic response. For example, the children in Heinlein's experiment were moving to the music. They could, as Mursell suggests, have simply been responding to the stimulating effects of tone as such but they could also have been responding to the rhythm. The fact that they could not synchronize their footsteps to the beat does not necessarily imply that they could not perceive the beat. Extending this thought further, it seems possible that an individual might be able to perceive rather complex rhythmic structures and yet lack the motor control needed to coordinate his movements to the rhythm. Conversely, it seems possible that an individual might perceive only the basic steady pulse, might lack an appreciation for the rhythmic complexities of a composition, and yet might easily be capable of performing that basic pulse through bodily movement. It appears obvious, when considering perceptual motor interaction, that the perceptual ability often outstrips the motor. It even seems possible that the motor can be developed without concomitant development in the perceptual realm. Psychologist Frank Restle (1981,

p. 38) gives an interesting example of this. He was doing an experiment using university music students as subjects. They were required to listen to a short melody played on a beeper and, using a keyboard, to try to play along as if playing the melody. He found all musicians could learn this task in a reasonable time except one piano student. She could play difficult pieces, had years of training, but said she had never been able to memorize anything or play by ear. If the written music was removed, the playing stopped. Restle said that she "was almost a pure case of going from the eye to the fingers directly, without any involvement of the auditory realm". Another common phenomenon is described by Reimer (1972):

> Some kinds of sensuous response to music are almost entirely an involvement of the body with little, if any, involvement of the mind. The pounding, throbbing, gut-shaking roar of some all-out hard-rock pieces is a body experience first and foremost. Loudness is intended to blot out thinking so that the physical feeling of the sound itself can be experienced directly. (p. 53)

Certainly it appears that many of these responses to music at deafening volume levels are more motor than perceptual. The rhythmic response, however, can go far beyond the performance or perception of simple repetitive events. It can be developed to extreme levels of complexity which go far beyond simply "keeping time".

Psychomotor Overexcitability

This form of overexcitability is a function of an organic excess of energy or excessive excitability of the neuromuscular system. Sometimes emotional tension is present and is transferred to psychomotor forms of expression. Many of the responses which were described in this chapter are manifestations of this mode of functioning. The

Kreitlers' reference to musical rhythms leading to "great excesses of enthusiasm and violent outbursts of energy" is an example of this. The Ruckmick study found individual differences in the amount of muscular movement (kinesthesis) felt by the subjects and McLaughlin referred to individual differences in tempo preference. Both could be due to individual differences in psychomotor overexcitability. Meyer mentioned listeners who seem to objectify the music and *perceive it in terms of their own bodily responses*. Some individuals seem to have an irresistible urge to move to music while others do not. This could reflect the difference between individuals who have psychomotor overexcitability and those who do not. However, there is another possibility. Individuals who listen quietly and do not make overt responses could be responding at a level where the psychomotor mode is under the control of the imagination, intellect, and emotion. This "movement" response is internalized. It may still be felt kinesthetically but is not expressed overtly. At the lowest level of development, a psychomotor response could occur almost independently of other modes of experiencing, but at higher levels, the different modes are much more closely interwoven.

In a recent article, Wertheim (1977) who is a neurologist, explained the connection between rhythm, movement, and emotion in these words:

> There is a strong link between rhythm and movement as well as between rhythm and simple emotions. The music of primitive peoples is dominated by rhythm. Every tune having a marked rhythm provokes in the listener a tendency to rhythmical body movements which are largely unconscious and which can be consciously inhibited. Dancing is an organized way of expressing these movements, and its refined form--the art of choreography--links rhythm with expression of complex emotional sentiment. (p. 293)

Here he is distinguishing between simple and complex emotions which he associates with "unconscious" and consciously inhibited artistic dancing. This exemplifies the difference between a lower and higher level of response to rhythm in music.

The various theories of rhythm which have been reviewed in this chapter are not mutually exclusive and, in fact, appear to complement each other. The different theories touch on different aspects of the response to rhythm. Kreitler and Kreitler (1972), referring to several different theories of rhythm conclude that:

> Rhythm is then pleasure-laden as a result of its multideterminative relations to many and various functions of the human being, which lends it the power not only to arouse tension and provide relief but also to fascinate, bind, and in certain cases dominate the perceiver. (p. 154)

With regard to music they believe that "as in the case of any complex phenomenon, the effects of musical rhythm may be as varied and multileveled as the cues in the music and the receptive elaboration of the listener allow for" (p. 156).

Music and the Sensual Mode

Dabrowski (1974) describes sensual overexcitability as a "function of heightened experiencing of sensory pleasure" (p. 117). Some of its manifestations include need for comfort, luxury, stereotyped or refined beauty, aesthetics, and fashions. As with the psychomotor form it may, but need not, involve a transfer of emotional tension to sensual forms of expression. If it does it may manifest in activities such as overeating. The concept of sensual overexcitability refers to the sensory pleasures of all the senses--seeing, smelling, tasting, touching, and hearing. Sensual pleasures, then, could include experiences such as feeling the texture of silk or velvet, appreciating the color and lines in a decorative work, enjoying the aroma of food cooking in the oven and so on. In music, the sense of hearing and the heightened experiencing of sound becomes the focus of attention.

Music always involves sensory experience through the sense of hearing. Sensual overexcitability for sounds--musical sounds--would greatly enhance the experiencing of the sensory qualities of music. Mental functioning in the sensual mode can be a "surface" kind of experience. One way of appreciating music, or any art is in terms of the direct pleasure given by what we call its "sensuous qualities". This kind of appreciation does not necessarily lead beyond these directly perceived attributes, although it can be a part of a much more inclusive experience.

What are these "sensuous qualities" in music? The sensory qualities of an object are made of the materials of which the object is constructed. The material of music consists of tones. In Chapter Three it was noted that a tone is characterized by pitch, duration, volume, and timbre (tone color). Of these, it is chiefly timbre that contributes to the independent sensuous quality of a piece of music. The timbre of the sound depends upon the instrument or voice and how it is used by the artist. Although the beauty of the configuration of sounds is normally part of the experience, it is possible to appreciate sensory qualities regardless of their configuration. For example, a beautiful, long, single note sung by a soprano or played on a violin can be appreciated in and of itself. Individuals often have preferences for certain instrumental sound qualities such as an alto flute or a trumpet or the voice of a certain singer and this becomes a major factor in their choice of music and purchasing of recordings. Similarly, some people are especially drawn to certain sound combinations such as a string quartet because of its uniformity of color, or a full orchestra because of its variety of tone colors. Attention to these attributes of tone color can sometimes take on major importance and the actual tonal configurations, structural factors or so-called intellectual factors are only of minimal importance. Certain sounds, of course, may be considered by an individual to be very disagreeable. For example, some people find the sound of bagpipes to be very irritating so they avoid music which makes predominant use of this sound. Although individual sensory qualities are only one aspect of a composition, an appreciation of their beautiful qualities can greatly intensify the aesthetic experience. A person sensitive to tone quality would much rather hear a concert played on good instruments than on mediocre instruments or hear it coming from a good sterephonic system instead of an inferior piece of equipment.

All music, no matter how sophisticated, depends to some extent on the sensuous qualities of sound and it is hard to imagine a beautiful piece of music where these qualities and tone colors would not give the listener some sensory satisfaction. Some styles of music and some composers depend more heavily on sensuous impact than do others and in some compositions, the sensuous qualities are complex. Composers must be familiar with the characteristics and potentialities of voices and instruments so they can organize them skillfully to create the effect they desire. The art of orchestration is largely concerned with the sensuous qualities of sound, and music of different styles and different periods of history use orchestral colors in different ways. For example, music of the classical era (18th century) was usually characterized by clarity of line and transparency of textures. Composers of the romantic era (19th century) often used very large orchestras and made their colors swim together. In the 20th century, many composers have turned back to classical ideals in terms of their use of instrumental timbres. They have thinned out the sound, attempted to make each instrument stand out clearly against the mass and returned to sharply defined colors.

The French Impressionistic composer Claude Debussy, is an example of a composer who created music full of delicate sensuous effects. Joseph Machlis (1961) describes the timbral effects created by Debussy and other impressionistic composers:

> There was little room here for the heaven-storming climaxes of the romantic orchestra. Instead we find a veiling of the orchestral sonority, against which the individual timbres stand out with delicate clarity. Impressionist orchestration shimmers with an impalpably pictorial quality. Flutes and clarinets are used in their dark lower register, violins in their luminous upper range. Trumpets and horns are discreetly muted, and the whole is enveloped in a silvery gossamer of harp, celesta, and triangle, glockenspiel, muffled drum and--at special moments--a cymbal brushed lightly with a drumstick. We saw that the impressionist painters, instead of mixing their pigments on the palette, juxtaposed specks of pure color on the canvas. The impressionistic musicians similarly juxtaposed pure colors, leaving it to the ear of the hearer to do the mixing. (p. 122)

Machlis explains that "for Debussy...art was a sensuous rather than ethical or intellectual experience. The epic themes of German romanticism were foreign to his temperament". He adds that Debussy thought of French music as music which aims to please, to charm, to entertain and in Debussy's words--to serve a "fantasy of the senses" (p. 133). Individuals with sensual overexcitability for sounds would be especially aware of these sensuous aspects of music. Debussy himself (and perhaps all good composers) must have possessed a high degree of sensual overexcitability which manifested in his highly developed sensitivity for sounds and tone color.

Descriptions of the Sensuous Response

Several writers have provided descriptions of what they call the "sensuous" response to music. For example, the distinguished American composer Aaron Copland (1957) suggests that individuals can listen to music on three planes--the sensuous, the expressive, and the musical. He describes the sensuous plane as the level of listening in which music is heard for the sheer pleasure of sound itself. He regards this as the simplest kind of listening because the listener hears but does not think about or consider the music in any way.

Ortman (1927), using what he calls a genetic (developmental) approach, also divides listening responses into three levels--the "sensorial", "perceptual", and "imaginal". The sensorial response is based on the raw material of music and is limited to what is given in the auditory stimulus itself. It is concerned only with the pleasant or unpleasant effects of the attributes of tones--pitch, intensity, duration, and quality. The sensorial response is essentially physiological and is not modified by the operation of any of the higher mental processes. He suggests that "accordingly, we should expect to find it in animals, in young children, and to a less degree, perhaps, in unsophisticated adults" (p. 213). This response is the most fundamental response to music and requires a minimum of mental effort. The essential urge is for physiological pleasantness and when the preponderance of pleasantness is destroyed, music ceases to attract the sensorial type of listener. Ortman says this sensorial pleasantness predominates in markedly popular music and he gives several examples from the popular music of his time. In this type of music the "affective tone of the unassociated stimulus is one source of musical enjoyment" (p. 50). He goes on to say that since the sensorial response is fundamental, it forms "an essential part of many responses and some part of all responses" (p. 48). Although typical of young children and some adults, it is not entirely absent in professional musicians. He gives some examples:

> Kreisler or Thibaut need but draw a single down bow, Galli-Curci but sustain a single tone for sheer beauty of tone to become operative in the response of a musician. A vocal teacher, upon hearing a famous baritone sustain a single tone in a production of Rigoletto exclaimed: "That tone alone is worth the price of admission". Again, when a sudden fortissimo breaks up any associative scheme which is functioning for the trained listener, the effect is essentially sensorial, forced, in this instance, by the intensity of the stimulus. (p. 50)

Bennett Reimer (1970), a music educator who has created an influential philosophy for music education, describes three levels of musical (aesthetic) experiences which he labels "sensuous", "perceptual", and "imaginal". He conceives of the sensuous response as an open-ended continuum ranging from the non-musical (or minimally musical) to highly sophisticated responses. He describes the sensuous response as one in which the music is perceived for its surface sound qualities with little or no attention to inner organization or the interrelation of the sounds. The listener, instead of listening with a perceptive ear for coherent events, listens "with the skin", the immediate qualities of sound being not so much "heard" as "felt". He, like Ortman points out that while the sensuous element is a component in all musical experiences "it can be and often is the dominant, if not the exclusive level of response" (p. 96). At what Reimer calls the "unmusical" end of the continuum, the sensuous experience is a "mindless, undiscerning, passive wallowing in the sheer existence of sound". His descriptions of the sensuous response includes psychomotor elements:

> The sound can be the driving, hyponotic beat of rock and roll, overwhelming in primitiveness and volume, entering the pores more than the ears, vibrating every muscle... and blotting out everything but sound sense. (p. 96)

Some rock music goes beyond the strictly sensuous level and contains music which is sophisticated and complex. Reimer adds that there is plenty of "body music available for those no longer young". He gives, as examples of music catering to the sheerly sensuous response, the "tickling bubbles of Lawrence Welk" and the "soothing syrup" of Mantovani. The "kicks" in both cases are sensuous. He regards them as minimally musical because perception is minimal, but attractive because sensuality is a basic human characteristic. Reimer (1972) points out that an entire industry exists to supply "music to be comforted by" or sensuous experience at varying levels of excitement. He says there is nothing wrong with the sensual response but there is nothing to be taught or learned about this response. It is a case of doing what comes naturally. His advice is simply to "enjoy". What Reimer does object to is that such use of music experience gives the impression that all musical experience should be so soporific in its effects. When Reimer (1970) discusses higher levels of sensuous responsiveness he includes the emotional component as part of the experience and he believes music education should help students become more sensitive. This is how he compares low level and higher level sensuous responses to music:

> This tense world is so overlayed with soothing Muzak that one feels occasionally, as if he is constantly wading through aural molasses. The teenager plugged in through the ear to a transistor radio is sucking on a pacifier but in a socially acceptable way. All of this use of sound for creature comfort no doubt fills a human need, but it does make it difficult for the music educator to use music for quite the opposite purpose, that is to help people feel more sensitively rather than less so.
>
> It is paradoxical, then, that the sensuous response to music can be powerfully aesthetic, requiring high levels of perception and reaction. As one moves along the continuum from mindless immersion in indiscriminate sound to subtle complex, expressive uses of the sensuous qualities of music, one enters a seemingly endless realm of aesthetic meaning embodied in the surface impact of sound. All important music, no matter when composed, depends, for at least part of its expressiveness, on the sensuousness of tone, and it is one of the major responsibilities of music education to help people become more sensitive to this dimension of musical affect. (p. 96-97)

Because music is an aural art, it is usually discussed in connection with the sense of hearing and auditory perception. However, music can give rise to multisensory sensations. This phenomenon, although in part a sensory event, will be discussed in the next section which deals with imagination and music.

Music and the Imagination

Dabrowski (1974) identifies two forms of imaginational overexcitability which he calls "pure" and "impure". The pure form manifests itself through associations of images and impressions, use of metaphor and in strong and sometimes animated visualization of experience. In its impure form, emotional tension is transferred to dreams, nightmares, fears of the unknown and so on. Imaginational overexcitability can lead to intense living in the world of fantasy, predilection for magic and fairy tales and invention of stories and poetic creations.

Dabrowski (1973) points out that highly imaginative individuals are capable of transferring their life experiences into the sphere of fantasy. A drama may be seen in visual imagination and a musical composition may be "heard" in "musical imagination". He adds that "in the states of meditation and contemplation the individuals 'see' and 'hear' without any concrete external sensory stimuli" (p. 2).

With regard to music, the manifestations of imagination might be broadly classified into two categories. The first is the "musical imagination" to which Dabrowski referred. This "auditory imagery" usually involves the retention of a musical image and can occur in the absence of an external stimulus (i.e. when no music is actually being heard). The second main category involves the tendency not to retain the musical sounds as given but to transform them into some non-auditory mode. This type of response occurs in the presence of an external stimulus (i.e. when music is actually being heard). These two kinds of responses are discussed separately below.

Auditory Imagery

Three related kinds of auditory imagery can be distinguished: (1) that which results from the retention of a musical passage, (2) that which involves, not only recall, but expectation while listening, and (3) the creation of a new piece of music. The first kind, in its extreme form, is eidetic imagery or the brilliantly clear kind of imagery which allows vivid and accurate recall of something previously heard or seen. Eidetic imagery is usually discussed in connection with visual experiences and is thought to be much more common among children than among adults. Gardner (1978), in his discussion of eidetic imagery, indicates that about 10% of children appear to possess it in its strong form and perhaps a majority of young children have it in a less pure form. Gardner states that "loosely speaking, eidetic imagery is a photographic memory; eidetic children can continue to scan a visual display even after it has been removed from the visual field" (p. 348). Eidetic imagery, in the musical realm, is the auditory equivalent of a photographic memory. Gardner points out that this capacity may pose problems for children in situations where they must categorize and classify objects because they devote their effort to preserving pure and uncategorized images. However, he believes, it can be an asset where the ability to retain experiences in their original form is important as it is for visual artists, "one group of adults who seem to have retained 'or developed' their sense of eidetic imagery" (p. 350).

Auditory imagery has already been discussed to some extent in Chapter Three of the present work. Here it was noted that the Seashore, Wing, and Gordon aptitude tests all included a subtest for tonal memory. Gordon labelled two groups of subtests with the word "imagery". The section in that chapter which described research under the heading of "Auditory Memory" referred to findings regarding short-and long-term memory for musical passages. For example, the studies of Deutch and Bergan indicate that music is stored as an "abstract aural image". The term "auditory imagery" usually denotes something more than just memory or faithful retention. This brings us to the second related type of musical imagery--that which involves expectation as well as recall. Seashore (1938/1967) noticed that some individuals appear to be unable to imagine any tune at all but others can recall or anticipate tones as clearly as if actually being heard. In Seashore's opinion, auditory imagery is the outstanding mark of the musical mind. In his words: "Tonal imagery is a condition for learning, for retention, for recall, for recognition, and for the anticipation of musical facts. Take out the image from the musical mind and you take out its very essence" (p. 6). Henson (1977) describes auditory imagery as "part of the stock in trade of performers and particularly conductors or directors of performances" (p. 12).

When writers describe auditory imagery in this broader sense it soon becomes fused with the intellectual and sometimes the emotional. In Chapter Three, the cognitive approach to perception based on the information processing model was discussed. This view of musical perception, which emphasizes selection, abstraction and encoding, storage, decoding, and response stages, must involve auditory imagery. However, the idea is not really emphasized. Somehow the "image" becomes "information" and listening to music is portrayed as a kind of intellectual processing of information. The theory of Leonard Meyer, which was outlined in Chapter Five emphasizes the importance of anticipation and expectation during listening. The arousal and resolution of these expectancies result in emotional responses. Bennett Reimer (1970) building on Meyer's idea, describes what he calls the "imaginal" response to music:

> It includes, in addition to the perception of expressive musical events and the reaction to be perceived expressiveness, a constant anticipation of musical events. The experience is marked by an absorption in the way the music sets up expectations, deviates from expected resolutions, causes uncertainty in modes of continuation, delays expected consequences of events, satisfies musical implications. (p. 99)

Reimer believes this to be the highest level of musical responsiveness. He calls it "imaginal" because the listener does not only perceive and react to events as they unfold, he also anticipates them before they happen. It is an intense, extremely attentive response which engages both mind and feelings at high levels of concentration. The listener feels that he is, in a sense, creating along with the music and there is a sense of "oneness" with the music. Reimer points out that this is "worlds apart from the 'lets relax to the music' kind of response so common inside and outside educational settings" (p. 99).

The third type of auditory imagery is that in which the individual actually is creating music in imagination, without any outward sound. A musical work may exist, initially, as a musical idea conceived in the composer's mind. Ravel once said, "I think and feel in musical sounds" and also "I am a musical hydrant, music flows from me like water" (cited in Henson, 1977b, p. 240). Sessions (1971) describes how the inspiration for a piano sonata came to him. It was in the form of a complex chord preceded by an upbeat, "This chord rang through my ear almost obsessively one day when I was walking in Pisa" (p. 52). Mozart's claim that his best compositions appeared to him all at once, is well known. Of course, before the musical work can be communicated, there are many hurdles to overcome. Some composers spend years bringing a composition to full realization. Brahms, for example, worked for 10 years on his first symphony.

Wertheim (1977), a neurologist, has identified certain aspects of "musical function" which defy attempts to find an "anatomo-physiological substratum". He writes:

> There is no explanation of the fact that some persons are able to express their emotions more easily by music than by verbal symbols. This expression is possible even without the sensory feedback which is a _sine qua non_ in other forms of art. It is impossible to imagine a blind painter. There are, however many composers who do not need a piano or any other musical instrument for their work and who usually compose while they sit at a desk like any author or playwright. They rely on their "inner hearing" which can suffice for the creation of extremely complex works even after the anatomical organ of hearing has been inactive for years. In this connection, the example of Beethoven is universally known. (p. 294)

Non-Auditory Imagery

The second main category of imaginational responses to music are those marked by the tendency to _transform_ rather than to retain the musical sounds. This second kind of imagery includes responses to music in terms of fanciful images, visual scenes, imaginary stories, and similar associations. Some music readily evokes and influences the content of this type of response. For example, program music (i.e. music with a suggestive title or story association) or vocal music where words convey a certain meaning, will lead to the visualization of scenes and other images on the part of the listener. Often the program notes distributed at a concert suggest these associations. However, some individuals respond in this way even to absolute music. (Absolute music is a term used to label that great portion of the world's music which has been composed simply as music without any attempt to represent the sounds of nature or to convey certain pictorial or poetic ideas.) It is likely that almost all music has potential for extramusical suggestion. Dabrowski refers to the use of metaphor as a manifestion of imaginational overexcitability. In some of the studies reviewed in Chapter Five, metaphors were used by subjects to describe music. For example, in the study by Brown et al, voices of singers were described as "dull", "coarse", "rough", "heavy", and so on. In Chapter Three it was established that we hear not the physical attributes of a sound, but a tone which has a certain quality. This timbre or tone quality is often called tone "color". This term seems so appropriate that we somtimes forget that it is a metaphor. For some individuals, however, this expression is not a metaphor. They actually experience color sensations when they hear tones and their color sensations are just as clear and vivid as the auditory sensations. This phenomenon, known as "synesthesia", deserves some consideration because for some people it is a very real and compelling aspect of the musical experience.

Synesthesia

In synesthesia, the individual responds to a stimulus in one sense modality with sensations which belong to another sense modality. This tendency to translate the experience perceived in one sense directly into another appears to be common among young children. Gardner (1978) indicates that the exact percentage of children who have synesthesia is unknown, but he gives several examples from his own experience with children:

> At four and a half, Kay told me that she saw brown when she fell asleep and saw blue when she was happy. A five-year old I knew consistently matched the letters of the alphabet to phrases on the piano: a rising and falling passage was an A; one that rose and fell twice was an M; and so forth. Preschool children routinely associate numbers with visual forms or letters and specific tones or tactile sensations with specific colors or shapes. (p. 350)

Many types of synesthesia are possible between any of the senses--sight, hearing, touch, taste, smell, as well as the less commonly recognized senses such as body schema and kinesthesia. However, Mursell (1937) makes an interesting observation with regard to music:

> Tonal synesthesia is a one-way process. We have a great many cases in which tone immediately and imperatively arouses sensations of color. We have fewer and much less well analyzed cases in which tone arouses sensations of smell and taste. But we have no cases where visual, gustatory, and olfactory sensations arouse tonal sensations. And this would seem to indicate that in the economy of human perception tone holds a unique and prepotent place. To use metaphorical language we might say that tonal stimulation tends to flow over into other sense channels, but that the reverse is not true. (p. 25)

Many years later, Farnsworth (1969) makes a similar observation with regard to color-tone linkages: "The reactions so far reported are one-way, with color never calling up a tonal hallucination" (p. 77). For well over a century it has been known that some individuals have the capacity (or the compulsion) to associate sounds with colors, shapes, or other sensations and this phenomenon has been the subject of numerous studies. In their extreme forms, synesthetic sensations are very real and whether they are pleasant or annoying, there does not seem to be any mental mechanism for preventing them. These experiences are not matters of linguistic metaphor, verbal association, or images called up at the end of a chain of conscious thought. The most common and well documented type of synesthesia associated with music is color-tone linkage. This is called chromesthesia or color hearing. An example of chromesthesia is reported by Haack and Radocy (1981) who describe their case-study of a middle-aged art educator. She experiences a certain definite color for each pitch of the scale. The pitch A is lavender, B is orange, C is red, D is blue, E is green, F is brown, and G is black. She also possesses absolute pitch (i.e. the ability to identify a pitch without reference point) and she became aware of both her chromesthesia and her absolute pitch during elementary school. Her auditory sensation precedes her color sensation and the colors are seen as bands on the field of vision. For harmonic passages in the music (when tones combine) each tone is still represented by its color, often as a series of pointillistic dots. She is greatly disturbed by light shows in which the colors do not match her particular color-tone linkages. Because of her absolute pitch, she experiences unpleasant chest sensations when notes are out of tune. She views her chromesthesia as a handicap when listening to music because of a tendency to dissect everything into notes and colors and she reports that she is very exhausted after attending musical events.

Timbre in music also has close color affinities. Ortman (1927) quotes the example of one subject who had a clear and precise association between instrumental timbres and color. For this individual cello was indigo-blue, the voice green, the clarinet yellow, the trumpet red, the oboe rose-red, the horn purple, and the bassoon violet. Associations between color and key have also been frequently reported. Beethoven, for example, is said to have referred to the key of B Minor as "black". The composers Rimsky-Korsakov and Scriabin both had very strong associations between key and color, but they did not agree. Scholes (1960) compares their color associations for many different keys. For example, the keys of C, G, D, and A Major were white, brownish gold, yellow, and rosy respectively for Rimsky-Korsakov. For Scriabin they were red, orange-rose, yellow, and green respectively. Different people have different color associations, but, as McLaughlin (1970) points out, the disagreements are unimportant:

> We are not concerned with everyone having the same associations, but with the fact that such associations exist and are very real to the people who experience them. In fact they are so real that they tend to generate a certain intolerance. While a person who sees, say, A major as rosy, can just about comprehend that many other people manage to exist without such associated colors, he tends to be far more impatient with a person who sees A major as green. In one case, it is obviously merely a loss to the people who are unable to see the appropriate colours, but to see a rosy key as green must seem to verge on wilful wrong-headedness. (p. 71)

Although vivid synesthesia can sometimes lead to unpleasant effects it can also enrich the experience of music. McLaughlin refers to two subjects that normally experience synesthesia who were completely unable to understand how people who did not have this sense would perceive any pleasure in music at all. People who do not have tone-color associations sometimes find it hard to believe that these experiences exist. Critchley (1977) gives an example:

> In anecdotal vein it can be said that when Liszt was appointed to Weimar as Kapellmeister, he bewildered his players at rehearsal by urging "more pink here, if you please", or by declaring "that is too black", or "here I want it all azure". (p. 222)

When the phenomenon of color hearing is described in dictionaries of music there is often an undertone of skepticism. Scholes (1960), for example, reports that some individuals have looked upon Mozart's music as blue, Chopin's as green, Wagner's as luminous with changing colors and so on. He then suggests that if these people are acquainted with much of the output of these composers "they must surely be looked upon as victims of fanciful obsessions" (p. 201).

McLaughlin (1970) believes that there exists a prejudice that "normal" or sane people should not be subject to such quirks. He quotes Galton, who describes this censorship and who believes that this visionary tendency among "sane" people is more common than generally suspected. Galton points out that early in life it is a hard lesson to learn to distinguish between the real and imaginary world. If the child's fantasies are laughed at and otherwise discouraged, he soon loses his power to have them. When visions are discredited, and when public opinion is of a matter-of-fact kind, the seers of visions keep quiet. Dabrowski (1973) would say that some people would discredit such experiences because it is a kind of reality which they themselves are unable to experience. In his words:

> We wish to risk the assertion that those who regard as real only sensory phenomenon usually suffer from a poor ability to perceive other forms of reality. We may say that they practice "reductionism" to sensory reality, because they lack or possess weak receptors of other kinds or levels of reality. (p. 3)

Critchley (1977), in his discussion of synesthesia states that "it is safe to assume that synesthesia is a phenomenon which is more vivid in childhood and which gradually fades with advancing years" (p. 220). A number of writers express the opinion that synesthesia may disappear because of the educational and social experiences of children. Marks (1975), for example, suggests that children may learn not to be synesthetic as they grow. Haack and Radocy (1981) believe that synesthesia may be more of a normal than an abnormal phenomenon which dissipates in many individuals because of lack of reinforcement and social expectancies coupled with particular stimuli. "After all, one is 'supposed' to hear a tone, not see it" (p. 85). They raise this question about education: "How many teachers are able to identify and understand chromesthetic individuals in their classes and help such students cope with their synesthetic tendencies?" (p. 86).

Farnsworth (1969) defines color hearing or chromesthesia as "color imagery of hallucinatory intensity" and reports that less than 1% of the population has true chromesthesia (p. 77). This figure was suggested by Seashore (1938). However, the phenomenon might be quite common in a milder form. Omwake's (1940) survey of college students found that 60% reported having some kind of color-tone associations. Another study by Karwoski and Odbert (1938) also found that 60% of 274 college students reported a tendency to associate color with music. They selected 34 subjects for intensive individual study and were able to discern three degrees of synesthesia. Colors were seen as vague patterns by 13 subjects, as meaningful images from past experiences by 12 subjects, and as very detailed colored abstractions by 9 subjects. Only one of these individuals could experience synesthesia with the eyes open. In this study, the researchers recognized the difficulty of distinguishing between true chromesthesia and a verbal association. Ortman (1927) reports that 28% of his subjects had a tendency to form tone-color linkages. Different studies give different figures but McLaughlin (1970) points out that these differences should not be surprising as there is "obviously a continuous gradation from real synesthesia, where the induced impression is as intense and vivid as the stimulus and at the other extreme, passing impressions only suggesting the ghost of another sense" (p. 67). If we include these less intense experiences, we are again concerned with all the non-auditory manifestations of imaginational overexcitability which preceded the discussion of synesthesia in this chapter. Color is not the only non-auditory impression to be aroused by music. Musical tones are often described as sweet, crisp, or even fragrant. Images in the visual, tactual, gustatory, and even olfactory modes have been reported and the many metaphors used to describe music must have a basis in human experience.

Both synesthesia and eidetic imagery are common in young children but among adults they are found more often in highly creative than in average individuals (Ferguson, 1973). Critchley (1977) reports that synesthesia has been found to be the endowment of those with "artistic sensitive or aesthetic personalities, especially musicians" and these people are often described as "possessing a lively imagination, deep sensitivity, a predominant visual imagery, and an inability to cope with pure abstractions" (p. 220). In connection with artists, Dabrowski (1973) makes the point that they sometimes "exhibit a kind of atrophy of receptors of some or one domain of stimuli, usually those of a practical nature while they show extraordinary growth of other receptors" (p. 2). For many artists the realities of intuition, dreams and fantasies are more understandable than everyday reality. "This reality is at the center of their concern and their inner experiences. In practical matters, however, they may perform poorly and be outclassed by practically-minded people" (p. 3).

Musi~~c and~~ the Intellect

Intellectual overexcitability is manifested in avidity for knowledge, analysis, preoccupation with theoretical problems and so on. Unlike the first three overexcitabilities, the intellectual mode does not distinctly manifest the transfer of emotional tension to intellectual activity in specific forms. This is not to say that intellectual and emotional processes of high intensity cannot occur together. They can, but as Dabrowski (1974) puts it, "they do not appear to take on such distinct forms" (p. 118). Piechowski (1975) explains it this way: "When intellectual and emotional process of high intensity occur together, it always seems possible to separate the intellectual from the emotional component" (p. 257). Emotional tension cannot be blended into intellectual tension. They do not mix, but instead they work together. It is important to note some of Dabrowski's distinctions between cognition, intelligence, and intellectual overexcitability. In his theory, he describes several cognitive functions at different levels, as well as the different levels of intellectual overexcitability. The various cognitive functions are related to, but different from the ordinary concept of intelligence. Dabrowski (1974) makes the point that "high intelligence can be totally divorced from other aspects of behavior" (p. 159). At the lower levels cognition may operate in isolation from other forms of behavior. Dabrowski says, for example, that scientific and scholarly specialization can reach a high level of achievement without concurrent development of emotional functions, that is, there may be no consideration for others or sense of relationship with others and so on. At higher levels, cognition comes under the influence [illegible] eventually the control of higher emotions. Intellectual overexcitability, at its lowest level of development manifests mainly as "skillful manipulation of data and information ('a brain like a computer')" (p. 126). At this level, it is really the activity of "intelligence" that can be observed. Even at the second level of development, Dabrowski has found the following:

> We observe erudition which can be extensive and brilliant but without systemization and evaluation of knowledge.

> There is no felt necessity to penetrate into the meaning of knowledge, to analyze in order to uncover the "hidden order of things" or to arrive at a deeper synthesis. Exceptional abilities in many fields can be nevertheless, one-sided. (p. 127)

When Dabrowski uses the term "intellectual overexcitability" he is referring to a special endowment for the development of "active, penetrating, and creative cognition" (p. 159).

It is possible for the experience of music to be primarily intellectual (cognitive) with little or no concomitant emotion. It can, on the other hand, be an experience in which both the intellectual and emotional processes are active to a high degree. Here, we will be concerned with experiences (and points of view) where intellectual and perceptual factors predominate.

Music is unlike the other arts in several ways. First, the other arts are constructed out of elements which are normally encountered outside art, but the tonal material of music is unique to music itself. As Kreitler and Kreitler (1972) point out:

> Even modern paintings devoid of explicit object references present color and forms which are imbedded in the human environment and have thus become carriers of the most varied meanings. Meanwhile, even if tones may sometimes be heard in the song of birds, such things as chords, melodies, and musical scales exist only as musical elements. This implies not only that extramusical association to these elements might be more restricted than in the case of colors, forms, or dance movements, but mainly that the meaning of the musical elements are dominated by the meaning of the whole piece of music and can hardly be studied in isolation from it. When a person hears a tone, an interval, or a chord, he tends to imbed these isolated stimuli in a musical context, so that the evoked meanings relate to the imagined context as much as to the actually sounded elements. (p. 142)

Here they have referred to "meaning" in music without reference to anything outside of music and have also used the phrase "imagined context" as opposed to the actual sounded elements. The term "musical meaning" is often used to refer to that kind of meaning that arises from the relationships among elements in the music. Leonard Meyer used the term "embodied" meaning for the same thing. Thus, as Meyer (1956) explains: "One musical event (be it a tone, a phrase, or a whole section) has meaning because it points to and makes us expect another musical event" (p. 35). He contrasted this with what he called "designative" or extramusical meaning. (see Chap. V)

Another characteristic that differentiates music from the other arts is that it is based on a clear and explicit theory. Music theory is a system derived for codifying and explaining practices with respect to musical structures (such as systems of scales and rules of harmony). This theory, or the structural aspect of music, has been viewed as the best starting point for investigating the experience aroused through music. Thus, in Chapter Three it was noted that musical aptitude (a characteristic of a person) was seen as an analogue of the music itself (sense of pitch, sense of rhythm, etc.). Similarly, the basis for musical experience has been investigated in terms of how certain tonal sequences and structures evoke a response. The cognitive approach (see Chap. III), the information-theoretic and Gestalt approaches (see Chap. V) to musical experience emphasize that the listener does not hear a series of discrete events but hears whole phrases, recognizes tunes and becomes aware of patterns. The perception of a tune (as distinct from a sensation) involves memory. The characteristics of perception (cognitive processing) are viewed as the factors which determine the type of experience a person can have when he listens to music. A perceptive listener makes short-term predictions about the musical future as he listens and in this way becomes absorbed in the musical meaning of a composition.

Descriptions of Responses Involving the Intellect

Both Ortman (1927) and Reimer (1970) place what they call the "perceptual" response at a higher level than the purely sensuous one because it is a response to tonal relationships rather than to the sheer impact of sound itself. Ortman describes the perceptual response as the interpretation of the sensorial effect:

> The sensorial effect is essentially concerned with qualities which explains its marked affectiveness. In its pure form it contains little else than the pleasant-unpleasant destribution. The perceptual response, on the other hand is concerned with auditory things: progression, sequence, motive, phrase, form, outline, contrast...and many others. (p. 52)

Ortman believes that the potentiality for educability of the perceptual response exists in every normal person, but it demands a higher, more complex mental attitude for its development than does the sensorial response. "The sensorial response remains, without qualification, the original path of least resistance" (p. 60). He also makes the point that for an experienced subject a perceptual response requires no more effort than a sensorial response does for an untrained subject.

Reimer describes two kinds of responses which involve the intellect. One is the "technical-critical" , which he considers to be an unmusical response and the other is the "perceptual", which he calls a musical response. Music students are required to take courses in theory, harmony, and history. In such courses they are often asked to analyze a composition or to listen to it for its structural characteristics. This is a purely intellectual approach to listening. It is an example of an experience which can involve a high level of perception, but no emotions or other kind of reaction. Reimer (1970) gives an example of such a response. "Music students taking dictation in theory class are exercising musical perception" (p. 80). He adds that their reaction, if any, is probably one of quiet desperation. Reimer labels a response "technical-critical" if the perception is of technical and peripheral matters:

> "What a bright string tone this orchestra has. It's perfect for this piece but the Mahler needs more depth." "That soprano certainly has trouble with her upper register." "Did you notice how the conductor used his right hand for some of the cues?" "I heard this pianist several years ago and his style has changed a great deal since then." "The sound on this recording is blurry." (p. 95)

Reimer believes that while this kind of perception is a necessary part of education, an overemphasis on the technical-critical level may prevent students from going beyond this kind of response. He thinks it is unfortunate that "many people get the impression from their musical education that the technical-critical response is the 'really musical' way to listen to music" (p. 95).

What Reimer calls the perceptual response includes, in addition to a reaction to sensuous elements, a response to how sounds are related to each other. It includes "perception, to some degree, of the constituent elements of music--melody, harmony, rhythm, etc...and their interrelations" and these are experienced as expressive events (p. 98). If there is no such reaction to these relationships as expressive events, this response becomes the coldly clinical technical-critical response.

The intellectual component is also emphasized in Copland's (1957) description of listening on the "sheerly musical plane". To achieve this kind of listening, the individual must:

> Hear the melodies, the rhythms, the harmonies, the tone colors in a more conscious fashion. But above all he must, in order to follow the line of the composers thought, know something of the principles of musical form. (p. 17)

Earlier in this chapter, the response which Reimer (1970) regards as the highest level of musical experience was described. He calls it the imaginal response but sees it as one which engages mind, feeling, and imagination. In this response the intellectual component is only a part of a broader kind of experience:

> The listener not only perceives the melody in relation to its harmony, for example, but anticipates changes in the movement of the melody and the harmonic changes which seem to be implied. He feels the section coming to a close, anticipating a cadence which will mark the end of one section and imply the beginning of another, noticing the unexpected treatment of the movement toward the cadence, the expressive diversions, the sudden fulfillment, the much-expected new melodic idea but with a surprising carryover of harmony from the previous section...he is, in a sense, creating along with the music. (p. 99)

It has been said that music is the only art in which we think in sounds. Reimer's description gives an example of this. In this response, the intellect is involved at a much higher level than in the technical-critical response.

Formalist Theories

There is a group of aesthetic theories which are described as "objective", "formalist", or "absolutist". These views of musical experience focus on the internal structural relations of the work and regard the aesthetic experience as primarily an intellectual one. The meaning of music is nothing more than the meaning of its structure. There is a world of "pure" music unrelated to the realities of life. Some of these theorists assert that "meaning" in art is not like any other meaning in human experience. For example, Clive Bell (1914) has this to say: "To appreciate a work of art we need to bring with us nothing from life, no knowledge of its ideas and affairs, no familiarity with its emotions"(p. 25).

Edward Hanslick (1891/1977) maintains that "definite feelings and emotions are unsusceptible of being embodied in music" (p. 408). He describes music as nothing more than pure sounds in motion. He says: "The ideas which a composer expresses are mainly and primarily of a purely musical nature. His imagination conceives a definite and graceful melody aiming at nothing beyond itself" (p. 409). In formalist theories, when the word "emotion" is used it implies a special sort of emotion, usually the "aesthetic emotion" which has no counterpart in other emotional experiences. For example, Bell (1914) asserts that:

> He who contemplates a work of art inhabits a world with an intense and peculiar significance of its own; that significance is unrelated to the significance of life. In this world the emotions of life find no place. It is a world with emotions of its own. (pp. 26-27)

Art is appreciated for its own sake and this appreciation is essentially intellectual. Hanslick regards any emotions aroused as purely incidental and aesthetically irrelevant. Feelings, to him, do not constitute the substance of the response. Music is enjoyed only when heard for its own sake and if any emotion, imagination, or other ideas are aroused, the reaction is not an aesthetic one. The meaning of music is inherent in its form and is inseparable from it. Schoen (1940) also maintains that the essence of the musical experience depends on "form-mindedness" and a person with a true capacity for an aesthetic response does not need to rely on associations or feelings.

Some composers also hold a similar view. For example, Stravinsky (1936) writes:

> I consider that music is, by its very nature, essentially powerless to express anything at all, whether a feeling, an attitude of mind, a psychological mood, a phenomenon of nature, etc....Expression has never been an inherent property of music. That is by no means the purpose of its existence... Music is given to us with the sole purpose of establishing an order in things, including, particularly, the coordination between man and time... Its indispensable requirement is construction. Construction once completed, this order has been attained, and there is nothing more to be said. (p. 53)

Music and Emotion

Emotional overexcitability is a function of experiencing emotional relationships which can include strong attachments to persons, living things, or places. Emotional overexcitability might be called the capacity to "love and worry". It was mentioned in Chapter Two that intensity of feelings and display of emotion alone are not developmentally significant. In our culture, emotion has generally been regarded as inferior to the intellect. In Dabrowski's view, it is emotion (and its development) that is the key to human development. Emotional functioning, as with the other modes of mental functioning can manifest at lower and higher developmental levels. However, in Dabrowski's view, the level of emotional functioning influences how the intellect and other modes will manifest themselves.

Emotional responses to music have been recorded since earliest times and, in fact, are so widespread that music has often been called the "language of the emotions". The psychological literature is replete with attempts to understand the affective response to music, but much of the emphasis has been on how certain aspects of the stimulus (music) evoke a response. There has been much less emphasis on the nature of the response itself. How has emotion been viewed in the studies reviewed in previous chapters? Meyer said that emotion is aroused when a tendency to respond is inhibited. Berlyne studied it as a level of arousal. It has also been approached as autonomic or physiological response, as a mood response, or simply as a like-dislike reaction (preference).

One common kind of emotional response to music, which is usually considered to be "unmusical", is the association of a piece of music with a certain person or event. Davies (1978) calls it the "Darling, they're playing our tune" phenomenon. He explains that the person acquires a specific emotional response simply because the tune was heard at a time when other pleasant experiences were occurring. Now the tune makes the person feel good simply because it is paired (associated) with that experience and it depends in no way upon the musical content of the tune itself. Davies points out that "even the most unmusical people usually have an associative response of this type to at least one or two tunes...In theory, Pavlov's tone would have served just as well" (p. 69). Davies goes on to say that certain kinds of music acquire certain connotations because of conventional usage. For example, love scenes in films are constantly paired with sentimental music, so this music acquires sentimental connotations. Continuing with this behavioristic explanation, he adds that through the process of "generalization" individuals may experience emotions in response to pieces they have never heard before. If we view this phenomenon from the standpoint of Dabrowski's theory, we could say that a person who responds in this way to music has some capacity for emotion. The

"Darling, our tune" response would require affective memory and the feeling of a relationship with another human being. If a person were incapable of such a response, we might suspect that that person is emotionally "cold".

There is something about sound, especially musical sound, that has powerful effects on the human body and mind. Mursell (1937, Chap. 1) discussed some of these effects and his points are well worth reviewing briefly. In his book he said that the problem music presents for psychology is: "How is it possible for pure tonal design to objectify and convey the immensely powerful and varied emotional significance which we know music to possess?" (p. 18). He followed this question with an explanation of how aural experience has a relationship to mental life and behavior which is different in certain important respects from tactile or visual experience. First, from an evolutionary standpoint the ear is the receptor organ most closely associated with bodily orientation and a sense of balance. Music, then, is an art which has a unique and intimate association with our feeling of bodily control and movement. The second point he makes is that because the neural connections between ear and brain pass through the nervous centers which are the emotion-producing mechanisms, that aural experience is uniquely associated with emotional reactions in both animals and human beings. Animals do not respond to musical patterns because the relational aspect of sound does not act significantly upon the cortex where structural discriminations are made. Animals respond to something much more primitive--to musical sound itself--and, according to Mursell, the response made is distinctly affective. Human beings share this inheritance but add something to it. We are capable of dealing with musical patterns in a manner not possible to lower animals.

> But the ultimate reason why such patterns are, for us, fraught with a compelling emotional appeal is that we, like them, are physically stirred by sound as we are not by sight. And this is the ultimate reason why music can be a significant art and carrier of emotion, rather than merely an intellectualized play with tonal relationships. (p. 21)

Mursell states that "to the psychologist, the essential function of art seems to be to express and objectify emotion in design" (p. 17). It is true that many other psychologists have discussed the relationship between sound and emotion. Roger Brown (1981), for example, feels that there is an intimate relationship between the two although he suggests this could be an individual matter. He cites a passage from a discussion on the psychology of deafness by Heider and Heider (1941) which indicates that for some people who become deaf as adults, there is a draining of feeling from the world around them:

> In my own case my conception of its effect was literally that of a lost world. The palpable reality of life was suddenly void--its elemental phenomena suspended. Silence fell upon the world like a hush of death and I alone seemed alive in the midst of it...The impairment of those things most intimately connected with the utilitarian and social relations of life while an intense source of trouble was never so destructive of the individuality as the loss of beauty and inspiration that went out with certain sounds... There must be something more elemental in the background of these things than was generally understood...sound pure and simple has a specific relation to feelings widely different from that of sight. Its primary effect was that of creating moods. It has been specialized into all kinds of forms that convey facts to the intelligence, but its earliest business was something else, and that business still exists. This being so, the simple fact that sound has far more to do fundamentally with originating our emotions, or how we feel from day to day, than has what we see... A writer has pointed out that we can see with indifference the writhings of a suffering animal that is silent, but that if there are cries of pain, it produces emotions at once. (cited in Brown, 1981, p. 240)

Any aural experience may have the potential for producing emotion, but tone is a specialized type of sound which has different effects than noise. Most sounds in nature are noises rather than tones. Mursell discusses some features of tones which are not characteristic of noise. First, tones exhibit a special relationship to each other which noises do not. The most impressive example is the octave relationship. If two tones an octave apart are heard the relationship is so compelling that the higher tone seems almost a part of the lower. This type of reciprocity is unique to aural (tonal) experience. Secondly, in connection with synesthesia, tone holds a unique status in mental life in that tone has a tendency to overflow into other sensory channels whereas other sensory modes show little or no tendency to arouse tonal experiences. In addition to these features, tones "are the most subjective of all highly organized sensations" (p. 25). When tones are heard together they tend to merge and lose their individuality, whereas noises do not. Furthermore, noise is definitely an undesirable environmental influence because it causes fatigue, increases tension, lowers levels of performance and, in general, militates against effective function. The effect of tone is just the opposite. It stimulates most processes and often leads to increased efficiency while reducing fatigue. The last point Mursell makes is that music also lowers thresholds of sensitivity to other forms of stimulation thus intensifying conscious processes. He reports, for example, that odors, colors, and tastes too faint to be perceived will frequently become conscious if the person listens to tone and print too small to be read ordinarily can be perceived when music is performed. Mursell maintains that the emotional reaction to music is normal and basic. In his words "music is indeed a potent psychic drug which directly arouses emotionality" (p. 29).

Roger Brown (1981) would agree that music and emotion are intimately related. He notes that old silent movies always hired a pianist and that today's movies and television productions always have a musical score. Then he asks:

> Why, when I first saw the Grand Canyon and Piazza San Marco and the Alps, did I feel that these things had all been more moving in Cinerama? Why? Because both God and man forgot to put in the music. (p. 240)

Expressionist Theories

In the previous section on music and the intellect, it was noted that some writers--including some composers--insist that music does not exist primarily to convey emotion or to communicate anything other than musical meaning. However, composers and aetheticians are sharply divided on this issue. Stravinsky said that music is powerless to express anything, but another composer, Copland (1939) agrees only to some extent when he says: "Heaven knows it is difficult enough to say precisely what it is that a piece of music means... But that should not lead one to the other extreme of denying to music the right to be 'expressive' (p. 12) The composer Paul Hindemith (1952) has this to say about emotion and music:

> The listener cannot avoid having emotional reactions; the musician must not attempt to neglect them... If the emotions did not respond to music, musical sounds would be as senseless as a gramophone playing on an uninhabited island. (p. 30)

The formalist or "purist" aesthetic theories, with their emphasis on "art for art's sake" separated from life's involvements, are strongly opposed by another group of theories which might be called "expressionist". The original 19th century version of this theory regarded art as the expression of the emotion of its creator. For example, Eugene Veron (1879) writes:

> Art is the manifestation of emotion, obtaining external interpretation, now by expressive arrangement of line, form, or color, now by a series of gesture, sounds, or works governed by a particular rhythmic cadence. (cited in Dickie, 1971, p. 40)

Leo Tolstoy (1829-1910) speaks of the experience of the spectator in his definition of art:

> Art is a human activity consisting in this, that one man consciously, by means of certain external signs, hands on to others feelings he has lived through, and that other people are infected by these feelings and also experience them. (Tolstoy, 1960, p. 51)

Dickie (1971) explains that expressionist theories try to show that art can do something important for people and attempt to relate art to the lives of people. Dabrowski (Note 2) would agree that art is humanly relevant. He writes:

> Great literature and art is always born out of emotional and intellectual conflicts... Great art puts us in contact with human conflicts, human destiny and tragedy, and allows us to discover something more human and more true. (p. 102)

Summary and Discussion

The five forms of overexcitability can be regarded as dimensions of mental functioning or as channels conducting information to the individual. These channels determine to what stimuli and in what way the individual is capable of responding. As modes of experiencing, all five dimensions are present in rudimentary form in every individual. In this chapter there has been a brief review of the manifestations of the overexcitabilities as well as an attempt to indicate how each form might manifest in connection with music. Dabrowski and Piechowski (1977a) state that:

> In the extreme case of hypothetical individuals endowed with only one form of overexcitability, their mode of experiencing would be limited to that one form. A psychomotor individual would know only how to be active and restless, a sensual one only how to seek sensory pleasure, an imaginative one only how to live in a world of dreams, an intellectual one only how to apply logic, and an emotional one only how to love and worry. (pp. 31-32)

Extending this idea to musical experience we would encounter (hypothetically) individuals who experienced music only bodily in terms of movement, only as pleasant sensory impressions, only as images, only analytically, or only as emotion. It is highly unlikely that an individual's response would be confined to only one dimension. In fact music appears to be uniquely capable of appealing to all five modes and sometimes to all five modes simultaneously--depending on the music and the qualities of the listener. According to Dabrowski (1974) one feature which is characteristic of reactions of overexcitability, is that the "response is specific for that type of overexcitability which is dominant in a given individual" (p. 117). He says, for example, that a person with prevailing emotional overexcitability will always consider the emotional tone of an intellectual question sometimes even to the extent that the person may fail to appreciate intellectual insights if they do not translate into human relationships. On the other hand, a highly intellectual person, in an extreme case, could be so absorbed in the analysis of feelings and in his need to seek causal relations to everything that he may be incapable of a genuine emotional relationship with another person. Extending this notion to the realm of musical experience, we would expect to find some individuals so absorbed emotionally in music, that they would be unable to appreciate it "intellectually" and, in fact, would have no interest in the structural qualities of music. Conversely, a person with prevailing intellectual overexcitability might be so caught up in the analysis of music that he may feel no emotion while listening to the music. The different forms of overexcitability do not usually appear in isolation from the other forms. Dabrowski and Piechowski (1977a) indicate that: "In a profile of a person who shows signs of overexcitability, we will normally find a dominant form accompanied by varying strengths of the other forms" (p. 35).

When a person listens to music it might be expected that the form of mental functioning which predominates in that individual would predispose him to experience music in a certain way. In other words, although the musical experience may include all five dimensions, one dimension might predominate. If a child in school finds it difficult to "track" the unfolding structural events in a piece of music it may have nothing to do with lack of musical aptitude, attention, or cooperation. He may, in fact, have a predisposition to experience music emotionally or imaginatively. It is also possible that the child's experience may be much richer than that of his teacher.

Many of the studies reviewed earlier in this thesis were based on quantitative experimental procedures. Dabrowski and Piechowski (1977a) state that this kind of psychology does not allow for an understanding of the human being as a psychological being. In their words: "The interest in man is chiefly as a living organism, hence the study of sensory reactions, perceptions, stimuli and responses, and animal psychology. Man is regarded as the product of external determinants"

(p. 206). At a higher level, there is an awakening of humanistic concerns and a growing interest in the workings of the human psyche. This is accompanied by "interest in introspection as one of the means of studying these phenomena" (p. 207). Some years ago, a number of studies using introspective methods were carried out in an attempt to gain an understanding of musical responsiveness. When we move from the level of analysis which relates perceptual processes and musical elements to a level in which human beings respond to actual music, we gain new insights about the nature of musical experience. The listening studies which are discussed in the following section acquire new meaning in the light of Dabrowski's theory because the types of listening identified show striking parallels to Dabrowski's overexcitabilities.

Research on Listening to Music

In 1912, Weld conducted a study to determine the nature of the differences in mental processes involved in musical enjoyment. Based on an analysis of the detailed introspective descriptions of his subjects, he discerned four types of listener--analytic, motor, emotional, and imaginative. The analytic listener made a critical analysis of the music. The motor type responded by singing, whistling and with body movements. The emotional responded to music in terms of feeling, and the imaginative was a passive attitude which often led to daydreaming about nonmusical matters. Weld found that when visual imagery was present it was always imagery of movement and that kinesthetic images and sensations in various parts of the body were very common. He reported that in some individuals these effects were so marked that they virtually dominated the entire content of consciousness. In other subjects, they were scarcely present at all. He said that they were normal elements in the total complex of musical experience and that they give rise to a distinct type of listening.

Vernon Lee (1932) conducted an introspective study in which he asked 150 subjects this question: "When music interests you at all, has it got for you a meaning which seems beyond itself, a message, or does it remain _just_ music?" On the basis of her data she classified the subjects into two groups: hearers and listeners. Hearers engaged in music daydreaming and found meanings in music beyond the music itself. Listeners attended to the musical shape for its own sake and were more inclined to intellectual activity.

Myers (1927) conducted an introspective study with 15 subjects who had varying amounts of musical training. He identified four types of listeners: the intrasubjective, the associative, the objective, and the character. For the intrasubjective listener, the appeal of music was for the sensory or conative experiences it aroused. Some statements made by Myer's "intrasubjective" subjects emphasize the sensory aspect: "I felt a touch on the tympanum" or "I felt a stinging up in the right arm" or "I felt warm in the ear" (p. 14). The conative response reflected a desire to do something. The associative listener found enjoyment because of the associations suggested by the music. For example: "I was in the Queen's Hall, a fair girl in a pink dress was playing and another girl was accompanying her" (p. 12). The "objective" listener approached music analytically. These subjects, who were most frequently those technically trained in music tended to adopt a critical attitude: "I noticed the second horn was too loud...

When the second tune came with the cello it didn't stand out enough" or "I never think of a 'programme' unless it is suggested to me... To me music is never sad or joyful. I only get an aesthetic impression" (p. 18). Myer's "character" type enjoyed music for its character personified as a subject or for its prevailing mood such as joyfulness or sadness. Comparing Myer's categories to Dabrowski's overexcitabilities, the "intrasubjective" appears to be a combination of the psychomotor and sensual, the "associative" parallels the imaginational mode, the "objective" the intellectual mode, and the "character" the emotional mode. Myer suggests that increases in the complexity of music results in a many-sided appeal. He adds that we might expect different kinds of music to evoke different aspects of responsiveness in the same listener. He points out that hardly any listener is of one pure type to the complete exclusion of the others. However, he believes that an artificial purity of type may arise from the process, conscious or unconscious, of inhibition:

> We have seen, for example, how the character aspect may be inhibited by the intrasubjective aspect... Here a "higher" aspect is replaced by a "lower" (for aesthetically, the character aspect stands unquestionably higher than the intrasubjective). But the converse may also occur. Instead of the lower aspect being released, it may be controlled by higher inhibition. (p. 17)

Yingling (1962) conducted some pilot studies and concluded that responses could be classified under four headings: associative, emotional, intellectual, and sensorial. He then proceeded to test the validity of this categorization in a study using the introspective technique. He asked subjects of varying degrees of musical sophistication to respond freely (in writing) to 10 compositions. He also asked for responses to a questionnaire the second time the music was heard. He concluded that these four types of responses did occur. Since most listeners can engage in more than one type of listening, Yingling used the concept of a "dominant" response which he defined as a numerical prominence of one of the four types. Although a listener does not listen in one way exclusively, one type of listening does predominate. When comparing response types and musical background, he concluded that instruction in appreciation results in a decrease in what he believes to be the more normal pattern for listening--that is, listening for the emotional element in music. Musical training leads to an emphasis on the intellectual element. Yingling believes education should not confine itself to developing the intellectual response. In his opinion the emotional element is important and can be developed through teaching.

Summary Statement

The response to music is complex but Dabrowski's five overexcitabilities define its basic dimensions. Chapter Seven contains a description of what I will term the broad concept of musicality.

CHAPTER VII

MUSICALITY

Musicality, together with other characteristics, is constitutive of the human being. Dabrowski has suggested that the human being (homo sapiens) is a homo emotionalis (in the sense of higher emotions) because emotional essence gives meaning to life. We might now add the notion of a homo musicus since music exists in all human cultures and musicality is part of the general human endowment. Music has been called a universal language but what is really universal is the human ability to respond to music.

What is the nature of this responsiveness? We can begin to understand it by considering it in terms of the five basic modes of mental functioning through which the individual processes experience. At lower levels of development these five basic forms can occur in relative, although perhaps not complete isolation from each other. At higher levels of development they begin to merge and become more and more inseparable. Within each mode there is a range of possible responses. Some of these are basic or fundamental and appear to be inherent in people. Others are higher or more developed responses which tend to combine with other forms. The five modes and some of the possible basic and higher responses are given below:

Psychomotor

Basic:

(1) The ability to perceive tempo which appears to be based on

physiological organic processes.

(2) The ability to be invigorated by lively music and soothed or relaxed by slower, nonpercussive music.

(3) The subjective tendency to group a uniform, unaccented series of sounds into accented groups of two, three, or four.

(4) The ability to get a sense of movement from music through (a) actual muscular movement (through bodily behavior--experiencing directly the physical feeling of sound) or (b) kinesthesis--the feeling of movement without actual bodily movement.

Higher:

(1) Auditory perception of more complex rhythms (with or without accompanying kinesthesia) when combined with other modes (emotion and/or imagination) would be a higher response.

Sensual

Basic:

(1) The physiological reaction to tone as pleasant or unpleasant based on the attributes of tone itself--pitch, intensity, duration, quality. This urge for physiological pleasantness requires minimal mental effort.

Higher:

(1) Affective reaction to subtle, complex, expressive uses of the sensuous qualities of music embodied in the surface aspects of sound, especially timbre (tone color).

Imaginational

There are two types of imagery: auditory, involving retention of music and non-auditory, involving transformation of musical sounds.

Basic:

(1) A minimal degree of auditory memory--enough to enable one to perceive music as music.

(2) Enough non-auditory imagery to enable one to sense the feeling of movement in music.

These two responses would seem to be the ones which could be considered the most basic and universal. Other imaginational responses are characterized by wide individual differences. Some seem basic since they often appear in early childhood (eidetic imagery and synesthesia) and yet both of these seem to represent "higher" responses than the two listed above because if they persist into adulthood, they most often do so in talented, creative, and sensitive people. Thus we might consider them "higher" responses rather than simply basic--especially if associated with emotional responses. It seems reasonable to classify the following as higher:

Higher:

(1) Eidetic imagery, and auditory imagery involving both recall and anticipation while listening if combined with emotional responsiveness.

(2) The kind of "inner listening" which enables one to hear a piece of music or create music with no outward sound.

(3) Synesthesia or other forms of non-auditory imagery (e.g. visual and other associations) if combined with emotional responsiveness.

(4) The imaginational response described by Reimer which involves feeling, intellect, and expectation at a high level of concentration leading to the sense of "oneness" with the music

or that one is creating along with the music.

Intellectual

Basic:

(1) Minimal intellectual grasp of music; just enough to be able to perceive music as music. (similar to #1 in the Imaginational Mode).

Higher:

The following are higher in the intellectual sense only:

(1) The coldly clinical analysis of music which Reimer calls the "technical-critical" response.

(2) The perceptual response to tonal relationships and structural characteristics described by Ortman if devoid of emotion.

These responses are developmentally higher.

(1) The perceptual response described by Reimer which involves not only perception of structural features but emotional responsiveness.

(2) Ortman's "perceptual" response and Copland's listening on the "musical plane" if combined with emotion.

Emotional

Basic:

(1) A simple like-dislike reaction.

(2) Varying levels of arousal and physiological, autonomic responses.

(3) Some kind of general mood response appears to be basic (e.g. recognition of the difference between happy and sad music).

Higher:

(1) Associations such as the "Darling-our tune" phenomenon.

(2) The emotional responses which accompany the responses listed above as "higher" for the other four modes.

(3) Many other responses which can include, at higher levels, states of ecstasy and transcendental experiences that defy description. Also those emotional responses which Dabrowski describes as allowing us "to discover something more human and more true".

Discussion and Implications

The description above represents an expanded idea of musicality. Let us call it the broad concept of musicality. Those responses listed as "basic"[1] are those which could be included in the universal response to music normally found in human beings, whereas those labelled as "higher" are characteristic of some, but not all people. However, all human beings respond to music in some way and at some level. The responses listed as basic are not to be disparaged for they are fundamental and form the foundation for other, higher responses. The important point about the broad definition is that musicality is a quality of all human beings and its basic dimensions have been identified.

Let us now compare the broad concept to what was identified earlier as the restricted concept of musicality. The two definitions are not mutually exclusive. It is not possible to label one true and the other false. In a sense, the broad definition incorporates the restricted one, the latter being construed as an elaboration, basically, of the sensory-cognitive modes of mental functioning. However, the two concepts lead to very different ramifications. For example, the use of the restricted concept leads much more readily to the categorization of both responses and people as either musical or unmusical. It was established in Chapter Three that even the restricted definition has several dimensions so that one might be musical in some ways but not others. For example, one could have an excellent sense of rhythm combined with a poor sense of pitch. The omnibus version of musicality tends to regard an individual as more or less musical in a more unitary way, but still various dimensions are identified--dimensions which correspond to the elements of music rather than to psychological characteristics of the person. The psychologist who has attempted the most thorough description of musicality is Révész (1953). In his view, a person who possesses musicality is one who has a deep understanding of musical forms and structure, who can regard a piece of music as an object of purely artistic contemplation, who can follow and even anticipate the composer's intentions experiencing the music so profoundly he feels he is creating it, and who exhibits the mental conquest of music or art. Révész describes the unmusical person as one who is unable to grasp the structure and compositional plan and is therefore unable to evaluate it in terms of aesthetic content. Révész recognizes degrees of musicality but the crucial criterion that separates the musical from the unmusical is not the emotional response, but the degree to which a person can comprehend the structure of music. He includes the emotional response as part of musicality, but this can also characterize the unmusical person. The qualities Révész regards as crucial are close to the restricted concept of musicality.

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[1] Implications of the term "basic" are discussed in Chapter X.

The slogan for music educators in North America is "Music for every child! Every child for music!" This is based on the widely acknowledged idea that the response to music is universal and the belief that all children can experience the joy of music. Reimer (1975) expresses the view of music educators when he says "Having been touched in our lives by the power of music, we wish that all people could be so touched" (p. 5). This is a laudible goal. The problem arises when the restricted concept of musicality--those perceptual abilities so important in composing, conducting, arranging, and performance--are considered to be essential to musical responsiveness. In Chapter Three and Four it was established that there are extremely wide individual differences in these perceptual abilities. O'Connell (1974) commenting on these enormous differences states:

> Thus it is easy to find in a group of normal children one who has 200 times the capacity for hearing of pitch that another equally bright child may have. Similar, but not quite so large, differences are found for tonal imagery, the sense of time, sense of rhythm, sense of loudness, musical imagination, musical thinking, and the capacity for motor skills. (p. 187)

The problem, then, is that the restricted concept of musicality is not universally valid. If the relationship of human beings to music depended upon the kind of musicality described by Révész, music would cease to be a human universal. Most of the psychological and educational research in recent decades has been based on this concept. It is certainly true that the ability to perceive music in this way can and does contribute to aesthetic responses of great power but it does not necessarily follow that this one specific route to aesthetic responsiveness is the only one. Since this is the manner in which many musicians experience music, it is natural that they would try to help children to learn to perceive music in this way.

What are some of the implications of the broad concept of musicality? First, the broad concept, in its most basic aspects, refers to all of humanity--to a general attribute of the human species--whereas the restricted concept refers more to individuals. The more the broad concept is refined, however, the less universal it becomes. When differentiations are made between basic and higher responses, more individual variation occurs. It differs from the restricted concept in that it moves from the psychological characteristics of people (modes of mental functioning) to the music instead of the reverse. Perhaps the most important implication of the concept is that one mode tends to predominate and therefore we can expect that different individuals will be predisposed to listening to music in different ways to a greater or lesser extent. This could mean that the attempt to teach a child with high non-auditory (e.g. visual) imagery to keep track of unfolding structural events in the music may be as difficult and unsuccessful as the attempt to get an eidetic child to draw a picture of what he sees. The eidetic child may have no visual images to draw upon and his attempt to translate or transform his experience in this way may detract from his ability to respond to the music. In both cases it is possible that the responsiveness of the child may be undermined. These are speculative comments at this point, but the broad concept, with its dimensions, does provide a new way to think about individual differences.

From a developmental point of view, most of the existing research is based on the restricted concept of musicality. We have some knowledge about growth in perceptual and cognitive skills as well as performance skills and stability of aptitude. What we know the most about are those traits which we can isolate, define, and measure. What remains to be done is to discuss the broad concept of musicality in a developmental framework. This will be the topic of the next chapter. Before embarking on the next chapter, however, two other related topics should be addressed. One is Dabrowski's overexcitabilities as overexcitabilities rather than as basic modes of mental functioning. The other is the concept of the "aesthetic".

Psychic Overexcitability

In order to identify the universal aspects of musical responsiveness, it has been necessary for me to deal with the overexcitabilities in their rudimentary form--as basic modes of mental functioning--rather than dealing with them exclusively as the increased type of psychic excitability Dabrowski refers to when he uses the term overexcitability. In stimulus-response terms, ordinary excitability could be called a stimulus-response whereas overexcitability is a stimulus-over-response. Dealing with these modes as basic dimensions of mental functioning has made it possible for me to establish what could be considered a starting point for musical development--a starting point which would apply to the majority of children. Some of the "higher" responses that have been described would imply the presence of overexcitabilities. The overexcitabilities, however, have a special developmental significance that ordinary excitabilities do not. Dabrowski introduced the term overexcitability to denote the various kinds of nervousness that he observed among children, adolescents, and adults who consistently overreact to external and internal stimuli. This overreacting, he noticed, appeared to be limited to certain dimensions (the five forms of overexcitability) even though the stimuli were different. The five forms might be thought of as channels through which information--both external and internal--are perceived by the individual:

> If they are regarded as channels conducting information, obviously the amount of information depends on the aperture of the channel. If more than one or all five channels have fairly wide apertures, then the abundance and diversity of information (that is, simultaneous experiencing in different modes) will inevitably lead to dissonance, conflict, and tension. Dissonance, conflict and tension are the substrates of the developmental process of positive disintegration. (Dabrowski and Piechowski, 1977a, p. 32)

The overexcitabilities lead to dissonance and tension but have the effect of intensifying and enriching experience leading to an expansion of mental development. A child possessing strong forms of overexcitability, especially intellectual, imaginational, and emotional, is highly sensitive to the environment and experiences life in a richer, multi-dimensional and sometimes a multilevel manner. These overexcitabilities are a sign of developmental potential.

How do these overexcitabilities manifest in children? The child with psychomotor overexcitability may be restless, impulsive, fond of violent games and sports, possess an insatiable need for change and may have nervous habits such as tics and nail-biting. One who is excessively reactive sensually is sensitive to colors, sounds, taste, or smells; other manifestations include the need for cuddling, kissing, and clinging to the mother's body, an early interest in sexual matters, the tendency to be a "show-off", and the need to be with others all the time. The fantasy and imagination characteristic of many young children is generally a sign of developmental potential. A highly imaginative child may be a dreamer, have vivid fantasies full of plans and ideas, is usually creative--often in poetry, art, and music and may have nightmares, fear of the dark, and so on. The child with emotional overexcitability takes everything to heart. Routine difficulties cause a great deal of stress and anxiety and the child may become depressed over everyday things. He will likely display early syntony--even empathy, since emotional overexcitability is the basis for compassion and an intensified ability for loving human relationships. Such a child often has early reflections about death. Dabrowski (1972) gives the example of a four-year old child who said "Death is a trip but it is hard to get out of the hole in the ground where they put the dead person" and she also asked: "How can you tell whether someone is sleeping or dead?" (p. 8). Children with intellectual overexcitability ask probing questions early in life and demand logical answers. Probing the unknown and love of truth is more characteristic of intellectual overexcitability than is academic learning or achievement per se.

Nervousness in children (and adults) is often looked upon with disdain in our society, but in Dabrowski's view such characteristics should not be regarded as negative. These individuals have a wider and deeper vision of reality. They see life and each experience in a more complex way. Events affect them more deeply and leave long lasting impressions. These nervous individuals are often discontent with the way things are and with their lives, so they constantly seek better ways of functioning and new realities. Such children may not be content with their achievements in school even if they are outstanding. They are in competition with themselves always striving for something better.

Developmental potential is also seen in children with strong special interests and abilities. With regard to musical giftedness, Gardner (1973) refers to studies of precocious children which suggest that certain children, at a young age, can be accomplished in the perceiving, creating, and feeling realms. It seems likely, therefore, that these children possess musicality (and ability) not only in the restricted sense, but in the broader sense which includes significant imaginational and emotional elements. They have an early gift for penetrating the essence of a domain of experience.

Development proceeds toward extensive psychological transformation as a function of the strength of the overexcitabilities. Psychomotor or sensual forms alone are not sufficient to engage the psychic processes and advance development to higher levels. It is important to encourage development of the other three forms. An insensitive environment will thwart the development of a sensitive child unless his developmental potential is so strong that he can overcome the influence of the environment. Dabrowski (Note 2) gives this example:

> A sensitive and imaginative child who displays strong emotional overexcitability, will, by nature, be mostly alone in his thinking, feelings, aspirations, and ambitions. Such a child will become more alone and more nervous, if he is treated as different, strange and not "normal" by his parents, teachers, and significant others. Depending upon the strength of his developmental potential, a child who receives such treatment, has two ways to go. If he has sufficient potential to counteract negative socio-environmental influences the child will become increasingly independent, creative, and authentic. With insufficient potential, in such poor conditions, the child may develop negative maladjustment, suicidal tendencies and even severe mental illness. (p. 48)

In the case of children who do not have outstanding potential, Dabrowski, Kawczak, and Piechowski (1970) have this to say about environmental influences:

> If the developmental potential does not exhibit any distinct quality, the influence of the environment is important and

it may go in either direction.

> If the developmental potential is weak or difficult to specify, the influence of the environment may prove decisive, positively or negatively. (p. 34)

Turning to a consideration of music, it is important to look at musicality and aesthetic responsiveness in terms of the overexcitabilities. Much of music education is concerned with singing, playing, and rhythmic activities which encourage active participation and involve psychomotor skills. Sometimes these skills are emphasized at the expense of emotion. Maslow's (1968) case provides an example:

> My early music education was also not very successful, because it taught a child who had a very profound feeling for music and a great love for the piano not to learn it. I had a piano teacher who taught me that music is something to stay away from. And I had to relearn music as an adult, all by myself. (pp. 70-71)

This was a case of a sensitive child in an insensitive environment. Educators try to develop aesthetic responsiveness not only through performance but also through listening to music. Two problems arise in this connection. First, the aesthetic response is often regarded as a highly private, personal response which is not to be influenced and cannot be taught. Therefore it is necessary to concentrate on the means for achieving this response. Conceptualization and perception are the means. Educators try to develop "overt response modes" in order to assess learning in these areas. These overt response modes, however, may be inimical to the aesthetic response itself. The second problem is with the idea of what constitutes an aesthetic response. This is a most difficult question and has been a subject for debate among philosophers for years. A brief review of basic aesthetic positions as well as the approach I plan to adopt for the next chapter are given below.

Views of Aesthetics

The Formalist or Absolutist theorists advocate an Art for Art's Sake and view aesthetic experience as primarily an intellectual activity. Any pleasure comes from using the mind in the apprehension of music and perceiving formal relationships provides its own kind of pleasure. Any reactions which are extramusical involving emotion or other associations are not aesthetic reactions. The Expressionist theories view music as a manifestation or communication of emotion and the aesthetic response as one which involves emotion. Another position, sometimes called Referentialist, holds that music communicates many meanings which refer to the extramusical world of concepts, events, emotional states, and character. These extramusical connotations are included in the value and meaning of the music. The aesthetic response, then, can include associations, emotions, and other ideas.

Meyer (1956) divides the Expressionists into two groups: the Absolute Expressionists and the Referential Expressionists. The former agree with the Absolutists that the primary value and meaning of music are to be found in the structural and formal relationships of the music. However, whereas the Absolutist insists that the aesthetic response resides only in the intellectual pleasure gained from understanding these relationships, the Absolute Expressionist would argue that these relationships are capable of exciting emotions in the listener. In other words, emotional meanings arise in response to intramusical factors and these exist without reference to the extramusical world of concepts, actions and human emotional states. The Referential Expressionists would argue that emotional expression is dependent upon an understanding of the referential content of music.

The aesthetic position which appears to be having the most significant impact in education is the Absolute Expressionist position as described by Bennett Reimer. Building on some of the ideas of Leonard Meyer as well as the philosophy of Susanne Langer, Reimer characterizes the aesthetic response as a combination of the perception of the aesthetic qualities of music and a feelingful reaction based on this perception. He divides musical experiences into two groups--the aesthetic (musical) and the non-aesthetic (non-musical), depending upon whether they are based on the perception of musical events. Some of these responses were discussed in Chapter Six. The aesthetic (musical) responses are the sensuous, perceptual, and imaginal. The non-aesthetic (non-musical) responses are the technial-critical as well as all extra-musical emotional associations, visual or literary images, superficial mood responses and religious, moral or other connotations. For an experience to be an aesthetic one, then, it must be based on the aesthetic qualities of sound and the reaction must be based on the expressiveness of those qualities.

The theorists who define aesthetic experience in certain ways often recognize that other responses do exist, but maintain that it is not possible to base an adequate aesthetic on them. For example, the Formalists would deny that any emotional responses are aesthetic ones although some speak of a special "aesthetic emotion" which is not like ordinary emotion and which arises from intellectual apprehension of the work. Similarly, the Absolute Expressionist would not deny that extra-musical connotations are often a part of the experience, but would insist that these are non-aesthetic. The idea that art is or can be deeply involved in promoting religious, ethical, political, or other ideals as well as the tendency to equate the "beautiful" with the "good" and the "true" is an ancient one, but the specific views are as different as are the individuals who suggest them. The doctrine of Art for Art's Sake originally arose as a reaction to the diverse and often incompatible views about the meaning of art and the nature of the aesthetic experience. These theorists oppose any approach which attributes to art any function beyond "pure" aesthetic enjoyment. Art must be experienced as an end in itself. Kreitler and Kreitler (1972) believe that this doctrine made artists and audiences more aware of the power inherent in artistic means. However, they go on to say that:

> A scientifically harmful heritage left behind by the doctrine of Art for Art's Sake is still the widespread conviction that art aspects and non-art aspects can or even should be distinguished in any work of art and the experience it evokes. (p. 326)

I agree with these authors when they say:

> However, neither this distinction nor its implications are justified. There is no reason to assume or to conclude that responses to ideas, values, information, and meanings communicated through a work of art are in any way less "artistic" or less relevant to the experience of art than responses to colors, tones, movements, melodies of sentences, and the reflectance of sculptural surfaces. Responses to both types of stimuli are dependent on cognitive processes, and contribute jointly to the overall experience. (p. 327)

The nature of this overall experience, within Dabrowski's framework, would also depend on the level of development of an individual as well as upon the presence and relative strength of the five overexcitabilities. It seems to me that experientally, we do not separate the aesthetic from the non-aesthetic, we just respond to the music.

Even though the various aesthetic theories may be fully elaborated and logically consistent, they presumably arose, originally, because of the differences in the kinds of experiences different individuals actually have when they listen to music.

For the remainder of this thesis, then, I will define "aesthetic" just as I have the word "musicality"--as a basic trait which, along with other traits, is constitutive of the human being. Reimer (1970) states that "the ability to respond to the significance of expressive forms is a basic, pervasive, peculiar characteristic of human beings" (p. 74). Kneiter (1971), another proponent of aesthetic education, writes that: "The anthropological mode of inquiry documents the aesthetic basis of personality" and also that "to study music is to study man and to discover a humanistic quality not readily observable through other forms of expression" (p. 11-12). Dabrowski (1967) writes:

> It appears that the higher the level of personality the greater the sensitivity to truly inspired art. One may say that the esthetic component is, to a greater or lesser extent, one of the fundamental elements in the structure of every personality. (p. 34)

CHAPTER VIII

MUSICALITY AND HUMAN DEVELOPMENT

> Music is the essence of humanness not only because man creates it, but because he creates his relationship to it. (Gaston, 1968)

In this chapter, I will outline, in a general way, how relationships with music might differ at lower and higher levels of development. Musical development was discussed in Chapter Four, but it was based on what had previously been defined as the "restricted" concept of musicality. However, in the present chapter, I will focus on musicality broadly conceived as the universal human capacity to respond to music and will discuss this capacity from a developmental perspective. In part, this discussion will involve a consideration of various musical responses reviewed in previous chapters. However, it will be necessary to go beyond existing research and to explore the ideas and viewpoints of certain musicians, psychologists, and philosophers and how their ideas relate to Dabrowski's theory. Some of these writers have been encountered in previous chapters, but their viewpoints require further consideration. Others will be introduced in this chapter for the first time. The statements of these authors are themselves a part of larger theories and by including them in this chapter I do not intend to imply that their theories, taken as a whole, are necessarily compatible. Their differences, which I will not dwell on, are based on different historical perspectives and varying avenues of approach. They are included here because they seem to have, in common with Dabrowski, a broad view of emotion or a multilevel view of music or emotion or both.

As a prelude to the discussion of developmental levels, I will elaborate further on the view of emotion which is held by Dabrowski as well as the views of certain other scholars.

Dabrowski's View of Emotion

Emotional experience and emotional development are given a central role in Dabrowski's theory not only because emotion has been a neglected area in psychology but because of his conviction that it is through the development of emotion that an individual becomes more and more human. Consider this statement:

> And even though the capacity for symbolic thought is considered to be a distinctive trait that makes man human (Pribram, 1971) we must stress that the capacity for feeling is, perhaps, even more fundamental. (Dabrowski and Piechowski, 1977a, p. 6)

It is important to point out that Dabrowski does not neglect the intellectual factor, but argues for a balanced interaction of emotion and reason. As development proceeds, reason and emotion increasingly permeate one another. However, for hundreds of years, the superiority of sensory and cognitive processes have been emphasized. Intellect has been regarded as the controlling mode of functioning and emotions have been regarded as intrusions, interruptions, subversions--primitive and irrational subordinates of reason. Dabrowski wishes to dispel the notion that mental life is controlled by emotion only at earlier, primitive stages of development and by reason or the intellect at higher levels:

> What appears to be true is that the emotional sphere controls human activity on every level. Just as emotional primitivism is generally combined with intellectual primitivism, so are high levels of emotional life associated with high levels of reasoning, though the reverse is not necessarily true. (Dabrowski, Kawczak and Piechowski, 1970, p. 113)

In discussing the intellect and emotions, Dabrowski (Note 2) points out that the intellect may control problem-solving in certain academic or technical matters, but it does not control our relationships with others "and it does not predominate in other personal, humanistic, and creative activities" (p. 131). It appears that the emotional factor controls human activity and development at every level. Human life would lose its meaning if the emotional component were taken away and furthermore, according to Dabrowski, a general theory of human development is not even possible if it excludes emotional factors.

A number of other scholars would agree that emotion is crucial to mental life and that it should not be subordinated to reason. Philosopher Robert Solomon (1977), for example, states: "It is our passions, and our passions alone that provide our life with meaning" (p. XVI). Solomon adds: "The passions are the very soul of our existence; it is not they who require the controls and rationalizations of reason. Rather it is reason that requires the anchorage and earthy wisdom of the passions" (p. XIX).

Dabrowski's view of emotion has two other important features. First, he conceives of emotion very broadly, and secondly, emotions are a way of knowing--they are cognitive. Dabrowski (1977a) quotes with approval several statements made by Susanne Langer, one of the important philosophers of this century. Since Langer's views are pertinent to the arts and will be referred to again in this chapter, Dabrowski's quotes are repeated here. These statements are taken from her book Mind: an Essay on Human Feeling (1967):

> For the thesis I hope to substantiate here is that the entire psychological field--including human conception, responsible action, rationality, knowledge--is a vast and branching deve-

> lopment of feeling (p. 23). The study of feeling--its sources, its forms, its complexities--leads one down into biological structure and process until its estimation becomes (for the time) impossible, and upward to the purely human sphere known as "culture". It is still what we feel, and everything that can be felt that is important (p. 32). (cited in Dabrowski and Piechowski, 1977a, p. 6)

Dabrowski, like Langer, has a broad concept of emotion. Individuals have emotional experiences and emotional reactions but also emotional attitudes and emotional ways of understanding. In Dabrowski's terms, it is possible to understand something emotionally. It is also possible to understand something intellectually but fail to understand it emotionally. Different levels of emotional development involve different modes of experiencing life--different "ways of being" in the world. Individuals who attain higher levels of development have increasing capacities for an emotional understanding of others and themselves.

In his book, Solomon (1977) argues for a concept of emotions as judgments with which we structure our world, measure the facts of reality and ultimately constitute our world and ourselves. Another philosopher, Ronald de Sousa (1980), in his article about the rationality of emotions, states that "emotions can be said to be judgments rather in the way scientific paradigms might be said to be 'judgments': They are what we see the world 'in terms of'. But they cannot be articulated propositions" (p. 138). Philosopher John McGraw (Note 3), who refers to Dabrowski's theory as "the Theory", compares Dabrowski's views with those of several philosophers:

> Additionally, both Plato and Aristotle regarded emotions as formally non-cognitive, a position rejected by the Theory. As Solomon argues, emotions have a conceptual structure of their own, a logic of life. Intellectual reason and emotion jointly share in an enlarged rationality. Experience is

> made precise by intellectual reason and rendered committed and impassioned by emotional reason. As the philosopher observes,...life without emotions would be empty; without intellectual reason, life would be blind, a position the Theory supports vigorously. Higher emotions, however, are not exactly "blind" according to the Theory, since they contain light and insight, which is to say, they are formally endowed with cognitive capacities. (p. 19)

Dabrowski's view of emotion as a way of knowing is supported not only by a number of philosophers, but by a growing number of scholars who approach the arts from what they call a "cognitive" viewpoint. As Perkins and Leondar (1977) explain, cognitive psychology has studied language, problem solving, memory, perceptual discrimination, and learning. However, the idea of cognition--the act of knowing--is now being considerably expanded. In their words:

> Cognition, or "knowing" is too easily construed as solely a matter of words and their silent manipulation. But recent work in cognitive psychology emphasizes that such non-discursive matters as perception, motor control, personality, and emotion may be embraced within this approach. (p. 2)

Perkins and Leondar go on to outline some of the basic premises of the cognitive approach to the arts. One of these premises is that our emotions constitute ways of knowing:

> Most obviously, through perception we find out how the world is. But the same is so of emotions as well. To note that a real or fictional plight moves one or leaves one cold is to say something about the plight as well as about oneself; emotional reactions offer not simply personal highs and lows but ways of registering and comprehending the situation "out there". To complicate this picture, discovery, insight, and similar cognitive achievements themselves carry strong emotions which enrich our experiences of making and perceiving. Thus affect becomes both a manner and a product of knowing. (p. 2)

Traditionally, a distinction has been made between emotion and cognition, and art is often thought to be the special domain of the former. However, the cognitive approach to the arts does not hold to the traditional view of emotion:

> But as just sketched, emotions are a way of reading the world; further, emotions, like the most cooly reasoned of conclusions, can be appropriate or inappropriate to their objects. One this account emotions do not oppose but become a mode of cognition. (p. 3)

Thus not only Dabrowski, but philosophers and other scholars are questioning our traditional views of emotion and are acknowledging that we can "know" emotionally. However, Dabrowski gives emotion a place of prominence in his theory. Furthermore, only Dabrowski has taken a developmental perspective which relates the emotional sphere to the other factors in mental life and which provides an integrating paradigm for seemingly unrelated areas of human existence.

The remainder of the chapter provides a description of the two qualitatively different phases of development: the heteronomous (levels one and two) and the autonomous (the higher levels). Accompanying the description of the first two levels is an assessment in terms of developmental levels, of many of the musical experiences described in earlier chapters. Following the description of the higher levels, is a general discussion which includes the contributions of certain writers whose views of musical experience would be consistent with Dabrowski's concept of multilevelness.

Level One: Primary Integration

This is a cohesive personality structure in which mental functions are integrated at a low level. Reality is limited to what is tangible, concrete, and available to sensory cognition. It is the reality of everyday life. Cognition is directed to the external world and can operate in relative isolation from other functions. Range of awareness is narrow and there is no intuition, only, perhaps, a kind of shrewdness based on watching well established stereotyped patterns of behavior. Intelligence (IQ.) may be low or high but it neither controls nor transforms basic drives but instead is used in an instrumental way--in the service of self-preservation and egocentric goals. There is no reflection in the sense of self-evaluation and no inner conflict, only external conflict with others. All conflict is seen as caused by someone else. Inhibition arises from external not internal controls. The individual does not have empathy, but syntony which can be described as a chiming in with others. It is limited to a group feeling resulting from participation in common activities. This is a superficial, easily expressed commonality with others (temperamental syntony) the feeling of "togetherness" observed on teams, at entertainment functions, dances, or union strikes. If conflict occurs and personal interest is threatened, feelings of kinship quickly disappear. Since there is no inner conflict and little consciousness of self, the person at this level often acts with great force and decisiveness in keeping with egocentric aims. Because of limited emotional capacity and lack of sensitivity, even grave experiences cause only temporary reflection but not enough to have lasting effects or to promote personality development. There is no reflection on one's own experience and behavior and no ability to process experience of any psychic depth. This is the least differentiated type of development.

Let us turn now to some of the musical responses described in earlier chapters. Listed below, according to the chapter in which they appeared, are the musical experiences which, theoretically, could occur at the lowest level of development--primary integration.

Chapter Three: Psychology of Music

Given sufficient intelligence and auditory capacity an individual could perform well on all musical aptitude tests (Seashore, Wing, Gordon) as well as all the tasks described in studies of pitch discrimination and auditory memory. In addition, one could perform well in all the listening tasks listed as educational objectives near the end of the chapter.

Chapter Four: Musical Development

All perceptual, vocal, and rhythmic skills as well as labelling tasks, and concept development including Piagetian conservation tasks described in this chapter could be accomplished at Dabrowski's level one.

Chapter Five: Experimental Aesthetics

All preference,statements based on Berlyne's "complexity" or "interestingness" variables or on information-theoretic variables could be accomplished at level one. Physiological responses also occur at this level although these could vary according to emotional reactivity and the reactivity of the autonomic nervous system. Mood responses occur at this level--at least recognition of the mood of a piece of music.

Chapters Six and Seven

These chapters discussed musical responses in terms of the five basic modes of mental functioning (overexcitabilities) and a summary was given in Chapter Seven. Referring to the summary of responses included in the "broad" definition of musicality, all responses listed as "basic" for each of the five dimensions could occur at level one.

This is not to say that all the individuals involved in the various experiments described in these chapters were, in fact, at the lowest level of development. It is simply that most of the research models that have been used do not allow us to gain any knowledge about higher levels of human development. We have been studying lower-order behaviors.

The description of Dabrowski and Piechowski (1977a) of the aesthetic attitude at level one includes these ideas:

> Preference for uncomplicated, "hard beat" rhythms of dance, loudness, strong voices, strong colors...rigid definiteness of features. Sensitivity to...ostentatious splendor, utilitarian "beauty"--the aesthetic of basic needs and the conditions necessary for their satisfaction (for example, the importance of possessing new things, where the new is automatically taken to be beautiful). (p. 144)

In view of these comments, we might expect individuals at level one to prefer music without too much complexity (in Berlyne's terms) or information (in Meyer's terms).

Level Two: Unilevel Disintegration

The first phase of changing from the more automatic and impulsive functioning of level one requires disintegration accompanied by feelings of anxiety as the cohesive, integrated structure begins to loosen. Level two is a loose ahierarchic structure--a "structure" without a structure. The dynamisms at this level are conflicting fluctuations of feelings (ambivalences) and actions (ambitendencies). The individual lacks a strong sense of direction since many different things seem equally important or unimportant. The person vacillates between "pros" and "cons" with no clear direction "up" or "down" (no hierarchy of values within oneself). Values are internalized from external sources such as parents, church, and government. The individual, whose feelings are changeable, may appear indecisive. One is very susceptible to social opinion or the influence of others and behavior is guided by what people will think or by the need for recognition and approval. Stereotyped ideas are accepted since there is no internal structure to generate or support non-conformity.

Broader awareness results from uncertainty and there is growth in the ability to reflect on oneself and one's motives. There is the beginning of intuition which takes the form of "hunches" which are successful about half of the time. Creativity at this level arises from fascination with an endless variety of phenomena but lacks discrimination or evaluation often being an "Art for Art's Sake". Creativity is impulsive and spontaneous but can be isolated from personality development. Creative pursuits and personal growth do not necessarily interact. In general, level two is one of fluctuation where conflicts are "horizontal"--between opposing tendencies of equal value. Phenomena are perceived as arbitrary, relative, and largely governed by moment and circumstance. Dabrowski uses the term "unilevel disintegration" in two ways. The first denotes a temporary departure from level one under conditions of stress. The second refers to a personality with built-in imbalances. Dabrowski regards "mixed feelings" as a sign of potential for further development.

It is more difficult to attempt to identify musical responses which might be most likely to occur at level two. First, all the responses listed above for level one could occur at level two but the quality of emotional involvement might be expected to differ. Reimer

(1970) describes what he calls a superficial reaction to music--the "snap judgment" which is a function of "snap perception" and "snap reaction".

> It is a very common idea that what one is supposed to do when confronted with a work of art is to evaluate it, to decide whether it is any good, and even more importantly whether one "likes" it or not. So people often go around an art exhibit as they would go around a smorgasbord table, sampling a bit of this and saying "I like that one. No, this one I don't like. Oh, I love that one"... In the vast majority of cases quick judgments reflect a superficial level of aesthetic experience. (p. 84)

Reimer believes this kind of attitude actually gets in the way of aesthetic experience:

> Art does not exist in order to be "liked" in the sense of providing simple transitory pleasures. It makes sense to "like" vanilla ice cream better than chocolate, or to "like" peaches better than plums. Concern about "liking" usually puts art on a superficial level. Art contains insights to be shared; it offers self-knowledge of a very basic sort. This is true of simple as well as complex art. (p. 84)

Dabrowski also refers to the superficial nature of response to beauty at level two and of the "epidermal" attitudes of "like and dislike" at level one. Although responses at both levels might be expected to be superficial, the influence of the second factor is strong at level two, so social influences would have a great effect on preferences at this stage. In Chapter Five several experiments demonstrating the effect of peer and other social influences on preferences were described. The overwhelming preference for rock music among school age youth seems to be a clear example of social determinism. A similar phenomenon exists at the adult level. Koestler (1964), speaking of the aesthetic "snob" refers to the person who, when reading Kierkegaard is not moved by what he is reading, but is moved by himself reading

Kierkegaard. In the same way, presumably there are people who are not moved by the music they hear, but by the fact that they are going to a symphony concert. Davies (1978) points out that in jazz circles, a distinction is often made between "real punters" and "scene-diggers".

Dabrowski and Piechowski (1977a), describing the aesthetic attitude at level two, speak of fairly strong, but partial sensitivity to music and other arts:

> There is a tendency for seeking saturation with some aesthetic stimuli. Absence of response to the expression of personality (that is, the highest developmental level) in aesthetic forms, absence of recognition and of connection between aesthetic sensitivity and self-perfection... Aesthetic experiences do not tend to be mutually related within a larger context of development and search for the "new" and "higher". They are not a means of transformation and hierarchical differentiation of aesthetic experience as part of emotional and cognitive growth. They are not linked with the inner psychic milieu, which is rather weak and formless anyway. Frequent attitude of "art for art's sake" ...although "human" experiences begin to act as stimuli for aesthetic experience and expression, thus leading to the beginnings of psychological content in art. (p. 145)

Here, they clearly place "Art for Art's Sake"--the doctrine which was discussed in Chapter Seven--at level two. At this stage of development they speak of creative instinct and aesthetic experience operating in a developmentally narrow range--in a way that does not fully engage the personality. At this level, "one observes a variety of interests, sensitivities, and talents". According to Dabrowski there are instances of a fairly high level of one-sided, development in a certain domain (such as music) but without the development of the "global man". In Chapter Four it was suggested that music, because of its formal nature, is often regarded as a self-contained art and that musical ability can be a self-contained kind of ability. It can develop without necessarily involving concomitant personality development.

Dabrowski and Piechowski (1972) provide an example of a young woman with aspirations in music. When responding to the question of her associations regarding "great joy" she spoke of good things that happened to her musically like a good jig that made her feel happy. This was an example of joy brought by music--especially fast rhythm (psychomotor overexcitability) and a mood response but with an absence of reflection (p. 91). Gardner and Winner (1976) give an example of relativistic attitudes among young people when asked to comment on art:

> When asked how to evaluate art, teenagers are also reminiscent of very young children; its all relative, they insist, a matter of taste. The adolescents seem to have lost what the 10-year olds were beginning to acquire--a set of standards that could be applied to any work of art--and insisted instead that no one painting was intrinsically better than any other. "There is no correct way to play music," one explained. "Good" art is whatever you like, just as some people favor spicy foods and others prefer bland tastes. (p. 74)

In general, at this level we might expect to find preferences which are largely socially determined and perhaps a lack of any real depth in emotional responses. However, since mental functions now interact to a greater extent, we would expect to find musical responses which combine imaginational with intellectual and emotional components. Many of the responses listed as "higher" in the broad definition of musicality (Chapter VII) should now be possible, but taste itself might still be unselective and determined by the environment. Dabrowski says that changeable vogues influence a person's unstable conception of reality at this level. There are many changeable vogues in music. There is a sense in which all aesthetic preferences are a function of culture, for we are ordinarily exposed only to the music of our culture and our choices are made from the music to which we have access.

Some writers make a distinction between the personal and social functions of music. Music has often been described as a source of social cohesion which, by its very nature, draws people together. Its union with ritual is universal and it has traditionally been used to inspire feelings such as love, loyalty, and patriotism. Music, according to Gaston (1968) is nearly always an expression of "good will, a reaching out to others and is so interpreted". He sees it as a "powerful expression of the interdependence of mankind, and, from the lullaby to the funeral dirge an expression of the tender emotions" (p. 25). Kaplan (1966) distinguishes between the social (collective) and the personal (aesthetic) functions of music. The social function ties one person to another and promotes a strengthening of group bonds, but the personal function takes one away from his group, if only for a moment. From the point of view of what he calls the aesthetic (free, independent, internal), function, music leads to some degree of psychological withdrawal. In his view, aesthetic education should serve both functions. There seems to be a parallel here between the personal and social functions of music and the personal yet social ideal of personality to which Dabrowski refers. What Kaplan calls the "aesthetic" goal moves in the direction of "freedom from conformity" and the development of "individual taste and self-reliance". However, this function should not be served at the expense of sharing music (sharing feeling) with others. Of course, music does not always bind people together. The kind of temperamental syntony Dabrowski describes at level one seems to be involved in these descriptions by Davies (1978):

> Also, the bringing of nations together in song seems to occur at least as much in times of war as in times of peace; and nearer home, mass singing is a frequent accompaniment to some of the worst conflicts between rival football supporters. In other words, song cannot only unite people together, it can apparently help in uniting them against someone else. Finally, the notion that musical harmony leads, as Kodaly suggests, inevitably to social harmony, is simply not true. It is not difficult to find petty jealousies or even more positive dislikes, between members of the same symphony orchestra. (pp. 23-24)

This is an interesting issue because there is a persistent belief among some educators that music education has effects on character that generalize to other situations and affect other aspects of life in a favourable way. They say that "students who blow horns won't blow safes". Dabrowski's theory suggests an interpretation which is that whether or not music has these effects depends upon a person's level of emotional development, strength of overexcitabilities and type of development (one-sided or global). Earlier in this chapter, a case of one-sided musical development which did not engage the whole personality structure, was cited. Referring to this musician, Dabrowski and Piechowski (1972), write that she "spends a lot of energy perfecting her music" and add "But we do not observe her spending much energy perfecting herself as a person" (p. 7). At lower levels of development, experiences (musical or otherwise) do not have the long-lasting effects that they have at higher levels. Whatever the emotion felt (if any), it has no meaning beyond the music itself. Those who claim that music does affect life in a favourable way, may do so because for them it is true. The claim that music provides insights of human significance is a reality for some people.

The Higher Levels of Development

The potential for multilevel (accelerated) development is marked by nervousness, anxiety, and the presence of several forms of overexcitability--especially emotional. Multilevel Disintegration involves two phases--a spontaneous phase and a reflective, more organized phase.

Spontaneous Multilevel Disintegration (level three) involves some fundamental changes, the most outstanding of which is internal conflict based on a sense of the "higher" and the "lower" within oneself. The stronger and more conscious these internal conflicts, the weaker are external conflicts and conflicts with other people. This is a crucial period of transformation--a period of inner revolution. An autonomous, emotionally discovered hierarchy of values begins to emerge and different kinds and levels of reality begin to open up. Thinking loses its logical certainty but experience becomes richer, more complex, more conscious and more self-critical. Cognition comes under the influence and eventually under the control of higher emotions. The structure of this level is hierarchical (as opposed to the ahierarchical one of level two) and the intense inner conflicts are now of a "vertical" nature. This means they are based on an inner awareness of that which is "more myself" as opposed to "less myself" (not to be confused with "doing my own thing", which is characteristic of level two). The emotional dynamisms of this period include capacity for shame, guilt, disquietude, and dissatisfaction with oneself. The individual feels inferiority toward himself which means he now measures himself in terms of what he is capable of instead of using external standards. The other dynamisms include astonishment with some of one's behaviors and "positive maladjustment"--the ability to take a conscious stand against something in the environment which is incompatible with one's feelings and beliefs. The person begins consciously to try to inhibit some behavior, is constantly responding to self-induced challenges, and enters into the slow, painful process of becoming truly self-determining and of striving for perfection. This new, valuative, multilevel mode of experiencing and thinking is consistent because the feelings underlying it are consistent. However, actual behavior is not yet so consistent. Control is not yet firmly established so sometimes behavior reflects the higher and sometimes the lower within oneself. These fluctuations produce conflicts which arise internally rather than externally. Existential anxiety involving questions such as "Who am I?", "What should I become?" and "What is the meaning of life?" pervade this period. Multilevel experience shapes creativity in important ways and tension is used creatively. One begins to use creativity constructively to express the inner tensions of subjective experiences and reactions to the human condition--the tragedy, the inspiration, the drama of human existence. Intuition and imagination play an important role in the perception of reality.

At level four, Organized Multilevel Disintegration, the personality structure is one of increasing order and synthesis and the individual is more self-directed and self-controlled. Higher emotions, intuition, and cognition are brought together in greater harmony. The hierarchy of values is now maintained consciously permitting fewer lapses back to lower levels of functioning. The "personality ideal" (what one plans to make of oneself as a human being) is consciously activated. The individual at this level exhibits greater tranquility and is capable of great empathy, self-awareness, self-education, and autopsychotherapy.

The all-important dynamism Dabrowski calls "subject-object in oneself" means one can look at oneself as if from the outside and perceive the individuality of another person (the self of another person as a subject). This enhances the understanding of reality as multilevel. At this level, the creative instinct is more strongly united with the global process of personality development and the leading themes become insight and sensitive understanding of human experience. Dabrowski and Piechowski (1977b), based on a study of the life of Saint-Exupery (French aviator and writer), demonstrated that the characteristics of level four correspond to the traits of self-actualization described by Maslow. These are: superior perception of reality; need for solitude and privacy; problem centeredness (instead of ego-centeredness); spontaneity and continued freshness of appreciation; creativeness; peak experiences; a basic underlying kinship with people and a desire to help the human race; philosophical, unhostile sense of humor; a universal, cross-cultural value structure; compassion; deep interpersonal relations; enthusiasm; and intensification of experience (pp. 199-217)

The level of Secondary Integration (level five) is the highest level of development and is marked by a new organization and harmonization of mental functions. Dabrowski also calls this the level of "personality", where "personality" means a self-aware, self-chosen, self-affirmed structure whose dominant dynamism is the personality "ideal". This is a personal, unique and yet a social ideal. Dabrowski emphasizes individuality and attaining the highest level does not imply that a person is not unique. Persons at this level are distinguished from one another by their own developmental history, by unique bonds of friendship and love and by their particular talents and interests.

However, they are all autonomous (self-directed), authentic (acting in accordance with emotional attitudes and beliefs), responsible, and have a deep and comprehensive consciousness. They are capable of universal empathy and give the appearance of great power and great peace.

Music and Emotion

What is the purpose of aesthetic education in music? Most statements of purpose refer to the importance of the emotional component of aesthetic experience. Philosopher Harry Broudy (1958) suggests that we think of education as "the cultivation of capacities for realizing value" and that it is, therefore, possible to speak of levels of musical competence and appreciation "with one level being genuinely higher than the other" (p. 77). Within Dabrowski's framework, capacity for realizing value goes hand in hand with emotional development. Two prominent music educators who are well known proponents of aesthetic education are Gerard Kneiter and Bennett Reimer. Kneiter (1971) has this to say:

> Music education as aesthetic education provides an environment for the cultivation of emotional maturity in the nonclinical sense. Emotional maturity here refers to the systematic education of the capacity for feelingful response. (p. 13)

Kneiter acknowledges the close link between music and emotion and comments on its relationship to personality:

> The fact that music is inextricably linked to feeling reveals the high potential for motivating student involvement. The sharing of feeling that binds musicians and audiences during performance is human empathy in the aesthetic domain. It provides an excellent opportunity to view the unifying influence the music exerts on human personality. (p. 14)

Bennett Reimer (1970) regards the aesthetic experience as one in which the listener shares the artist's insights into subjective reality which is captured in the music's expressive qualities. The listener explores new possibilities of feeling opened up by the music's exploratory nature. The experience is both a sharing and a discovering. He believes that art is not esoteric or removed from life, but a basic means for making contact with life. All art, according to Reimer, serves the same function which is to provide a means for exploring and understanding the nature of human feeling. He defines aesthetic education as "the systematic attempt to help people explore and understand human feeling by becoming more sensitive to (better able to perceive and react to) conditions which present forms of feeling" (p. 143). (Reimer uses the term "feeling" in the broad sense that Susanne Langer does and the phrase "forms of feeling" is one which Langer uses to describe the relationship of music to feeling.) Reimer (1972) describes the relationship between listening to music and the human personality in this message to listeners in a textbook for aesthetic education:

> Sensitivity for the listener is the willingness to feel music and the kind of feeling shared. You are responsible for this aspect of musical experience: No one can make you feel, and the nature of your feelings are determined by all you are as a human being. We shall continually emphasize those aspects of music which can cause feeling, and we shall constantly remind you that the reason you should hear what is going on in music is so that you can feel what is going on... We can supply the musical conditions that can involve your feelings. You must supply the involvement out of your own being. (p. 56)

Reimer describes a good listener as one who is less concerned with liking music than with experiencing music. He does not count on simple pleasure--liking--as the only payoff of listening to music. Like Dabrowski, Reimer relates the nature of what one is capable of feeling to what that person is as a human being. For Reimer the major function of aesthetic education is to promote the fullest possible sharing of insights into human subjectivity contained in music and he believes that through aesthetic experience "humans can know more about their affective nature and therefore about their humanness" (p. 64).

The philosophy of Susanne Langer is having an impact on music education. Reimer, in his philosophy for music education draws upon her ideas and she is often quoted in articles about aesthetic education. Langer (1942; 1953; 1957; 1967) uses the term "feeling" broadly to refer to the "inner life". Langer (1953) states that: "Music is a tonal analogue of emotive life" (p. 27). She rejects Formalist aesthetic theories which view music as pure form totally unrelated to life as well as Expressionist or Emotive theories which regard music as communication of the emotions of a composer to his listeners. She rejects literal assigned connotations but instead approaches musical meaning symbolically. Music is an expressive form. It expresses human feeling. This feeling is expressed symbolically. Feelings are often experienced as "tension release" and they are so much like the dynamic forms of art, that art is their natural symbol. In her terms, there is a morphology between musical forms and forms of feeling. Recognizing this, we respond to music in a feelingful way. The composer expresses not his own actual feelings, but his knowledge of feeling. Music objectifies feeling so that we can contemplate and understand it. Whereas words objectify outward reality, music objectifies inner or subjective reality. Music is a form which expresses or symbolizes the inner life of a psyche. She refers to music as "our myth of the inner life". Langer (1957) says that we do not go to a concert to witness self expression:

> Now, I believe the expression of feeling in a work of art--the function that makes the work an expressive form--is not symptomatic at all. An artist working on a tragedy need not be in personal despair or violent upheaval; nobody, indeed, could work in such a state of mind. His mind would be occupied with the causes of his emotional upset. Self-expression does not require composition and lucidity; a screaming baby gives his feeling far more release than any musician, but we don't go to a concert hall to hear a baby scream... We don't want self-expression. (p. 25)

Reimer, building on this idea, says that creation is not a "working off" but instead a "working out". This seems to me, to be close to Dabrowski's distinction between emotional overexcitability and a mere emotional display (e.g. a child's tantrum). It also parallels a distinction made by Reimer (1972) in his discussion of jazz, which can achieve powerful aesthetic effects just as can other styles of music. He points out that sometimes we sense that the sound is no longer musical but has become an emotional display: "A bad jazz trumpeter will 'scream' on his horn, not adding to the music, but simply crying in public" (p. 15). In Reimer's view, convincing music never crosses from art to a sheer display of emotion.

Langer (1957) believes that feelings and emotions are generally regarded as irrational because words cannot give a clear idea of them. She insists the life of feeling is not irrational:

> Music is not self-expression, but formulation and representation of emotions, moods, mental tensions, and resolutions --a logical picture...not a plea for sympathy. Feelings revealed in music are essentially...presented directly to our understandings, that we may grasp, realize and comprehend these feelings, without pretending to have them or imputing them to someone else (p. 222)

She describes the perception of artistic import as intuitive, direct and immediate. Music contributes to self-knowledge and provides insight into all stages of life and mind.

One psychologist who examines musical experience from a developmental perspective is Howard Gardner (1973). Some of his ideas were included in Chapter Four which focused on musical development. Gardner views the arts as a communication of subjective knowledge between individuals through the creation of nontranslatable art objects. To be effective, the art object must capture the meaningful dimensions of subjective experience. In order to participate in the artistic process, the individual must be able to embody within the art object, significant knowledge or understanding of his own life, and to be able to discern such knowledge when confronted by an aesthetic object. It is only if an individual's feelings have been involved in a meaningful way that his relationship with a work of art can be consummated. Feeling, he says, is paramount in the experience of an audience member. Gardner believes that the development of feeling life--the ability to experience increasingly complex emotions and to discern "nuances in the feeling life of others--is crucial for participation in the artistic process" (p. 77). Gardner distinguishes between roles of audience member, creator, performer, and critic. To qualify as an audience member, one must undergo affective change in response to an art work. He suggests that this affective change may be a partial experience or a more comprehensive one:

> Knowledge of the background of the work, sensitivity to nuances and layers of meaning, awareness of alternative styles or performances may enrich his range of feelings; but even a partial grasp of the intent or import of the work can suffice to alter his phenomenal experience in a desired way. (p. 26)

He suggests that the development of a heightened feeling life probably depends on a range of experience and sufficient knowledge of interpersonal relations so that one can appreciate artistic embodiments of these feelings.

It was mentioned in Chapter Four that Gardner's research led him to the unexpected conclusion that the child, by the age of 7 or 8, has, in most respects, become a participant in the artistic process and need not pass through any further qualitative, developmental reorganizations (in the Piagetian sense of logical thought). He sees further artistic development as a deepening process. This is what he writes about the effect of operational thinking on the child's relationship with music:

> These different approaches to music seem consistent with other findings and provide evidence that, with the advent of formal operations and an "abstract" attitude, subjects assume a new kind of "distanced" relationship to aesthetic works, one which may be less effective in revealing the work than the unmediated relationship younger children have. (p. 195)

This raises an interesting issue for education. It suggests that perhaps some of the "loud mind" activity sometimes encouraged in connection with listening to music may be detrimental to aesthetic responsiveness. Another writer who refers to the aesthetic responsiveness of the young child is Reimer (1970) who says:

> The first-grader delightedly singing "Twinkle, twinkle little star", perceiving its lovely contour of melody, its rightness of harmony, its "ongoingness" of rhythm, its balance of form, and "feeling" the expressiveness of the song as musically artful, is having the same kind of experience--aesthetic experience--as the crustiest old musicologist absorbed in the complexities of Beethoven's Ninth. The only difference is in degree. The job of aesthetic education is to influence that degree. (p. 83)

Let us put this question into a Dabrowskian framework. The difference between the child, if he is at the level of Primary Integration, and the "crusty old musicologist", if he has developed beyond this level, is, at least in part, a difference in emotional capacity and emotional complexity. What Reimer calls a "matter of degree" and Gardner calls a "deepening process" both involve emotional development.

Returning to Gardner's (1973) views regarding music, he points out that symbol use has two aspects which he calls the "systematic" and the "referential" (p. 127). The first involves systematic relationships among the symbols themselves whereas the second involves the linking of an element or symbol to a class of objects or properties. For example, words have relationships to each other as well as to objects. In music, elements have a complicated series of associations with each other. Gardner views music as being highly systematized and organized, but only having limited reference, although this referential aspect may be important. Part of development involves an understanding of formal aspects of the symbol system. With regard to the referential, for the young child, music may seem to contain certain specific references like language (e.g. Brahms' Lullaby is equivalent to "bedtime"). However, the more widely sensed kind of reference is the relationship between music and the emotional-feeling life of the individual. Gardner states: "These referential or 'expressive' aspects of music are accessible to young children as well as to adults, and unquestionably mediate the perceiver's relationship to music" (p. 131).

Here Gardner is speaking of a different kind of mediation--not an intellectual so much as an emotional mediation between music and the listener. It is this "emotional connection" which requires further elaboration.

The Nature of Music

Music, like a person, has both physical and non-physical aspects. A person has a body composed of bones, muscle, tissues and so on, but the person cannot be defined or understood in terms of these things. Music has tones, chords, intervals, rests, and other acoustic properties, but it cannot be defined or understood in terms of them. Let us call these physical properties of music the objective qualities. These objective qualities have been isolated and analyzed in terms of attributes of sound--pitch, volume, duration, and timbre, in terms of musical theory--scales, harmony, and internal formal relationships, expressed as musical concepts, and so on. What is the non-physical, non-material aspect of music? Many different terms and ideas have been used to try to define this dimension of music. For example, we have encountered phrases such as expressive qualities, patterns of tension and release, referential meaning, import, significance, patterns of feeling, dynamic qualities, and subjective reality.

The composer Paul Hindemith (1961) distinguishes between sound, the external quality and what he calls the immaterial, spiritual aspects of music. However we choose to label these two dimensions, we must acknowledge that when we hear music we hear something beyond an acoustic event--something that seems to have no counterpart in the physical world. Thus hearing music differs from the hearing of the other sounds and noises in nature. Perhaps I should qualify this assertion and say that some (or most) people apprehend this non-physical dimension of music, leaving open the possibility that there may be individuals who hear music as they do any other acoustic event (There is a rare anomaly known as "tune-deafness" in which one is incapable of making sense out of a series of tones. This is not the same as the person who can hear the tune, but remains indifferent to it). In addition to these considerations, it should be noted that in music we do not ordinarily speak of an art "object". The experience of music seems to be too subjective to use a word like "object". We objectify it through study and analysis. Some individuals, perhaps partly as a result of study and analysis, experience music more objectively (intellectually) than do others.

What does it mean to understand music? Some of the authors cited in earlier chapters think of understanding music as a perceptual, intellectual, or conceptual activity. This kind of understanding refers to the objective qualities of the music. However, can the non-material dimension of music be understood intellectually? The comments of composer Aaron Copland (1961) are interesting in this regard. He writes about what he calls the "gifted" listener--the non-professional who possesses the ability to lend himself to the power of music. He says, "The interesting question, then, is not whether he is deriving pleasure, but rather whether he is understanding the import of the music, and if he has understood, then I must ask: _what_ has he understood?" (p. 11). Copland, when in an audience at a concert where his own music is being played, tries to fathom the exact nature of listeners' responses. "At such times I am concerned not so much with whatever pleasure the music may be giving, but rather with the question of whether I am being understood" (p. 10). Here, Copland is not referring to intellectual understanding in the sense described above, but an understanding of the import, the non-physical dimension of music. This kind of understanding is of an emotional-intuitive nature.

Can music be understood emotionally and intuitively? Yes, because as Dabrowski, Langer, Solomon, de Sousa and others have argued, emotion is a "way of knowing". There is also the phenomenon of physiognomic perception which was described in Chapter Five. Here the perception of emotional meaning, such as the sadness of a weeping willow is directly perceived. In the same chapter, Leonard Meyer suggested that the structural qualities of music may be experienced as emotion by some listeners.

The Multilevelness of Music and Musicality

Dabrowski's concept of multilevelness applies not only to personality and emotional development but to all human phenomena--including music. Regarding music, Dabrowski (Note 2) writes:

> Chorals and symphonies, masses and passions, funeral marches, organ music and gregorian chants, and on the other hand, military marches, sensual music, dance music, social and easy to listen music--how many different levels and different contents? (p. 112)

Kreitler and Kreitler (1972) also speak of what they call the "multilevelness" of works of art and they give an example of how different perceivers may experience the same work differently:

> A pacifist mother urged her son to read Remarque's All Quiet on the Western Front in order to inspire him with the horror of war. But when he finished reading the novel he remarked enthusiastically: "Its' great! Too bad I missed out. When is the next one going to start?" (p. 348)

There are many styles of music and there is good and poor music of every style. There is also music to accompany every kind of human event--dances, funerals, ceremonies, rituals, and entertainment functions. Music can convey a wide range of human emotions and experiences. Some human experiences are light-hearted and some are tragic; some emotions are simple and some are complex. The music appropriate to each will vary accordingly. Complex and multileveled compositions may be partially grasped by some listeners and more completely grasped by others. The experience of the listener is a joint product of the listener's capacity to respond and the composition's power to yield. Hindemith (1961) believes that the reactions music evokes are images or memories of feelings. Therefore, a person cannot grasp the emotional significance of a composition if the feelings have not been experienced:

> Furthermore, we cannot have any musical reactions of emotional significance, unless we have once had real feelings the memory of which is revived by the musical impression... "Musical" gaiety can be felt only if a real feeling of gaiety is already known to us... It is only with the memory of feelings in our mind that we can have any feelinglike reaction caused by the music. (p. 76)

According to Dabrowski, affective memory is a manifestation of emotional overexcitability and it is also the means by which individuals at higher levels of development can perceive the lower levels and have empathy for individuals at lower levels. In terms of Hindemith's view as well as Dabrowski's theory, we would expect to find individuals at the level of Primary Integration unable to grasp the significance of music of great emotional complexity. Multilevel individuals, through affective memory, would be able to appreciate music conveying less complex emotional states--children's music, for example.

Dabrowski (Note 2) believes that great art is always born out of emotional and intellectual conflicts and processes of disintegration. The tragedies of human life, the division between higher and lower, the striving against fate, the pain of human existence--these kinds of experiences are the essence of great art:

> Through their music, great composers reach the strongest developmental potentials... Nature and the supernatural, inborn essence and essence created during breakdown and the "flight-upwards"--these are the two basic sources of music and art in general. (p. 113)

Dabrowski describes the complexity of emotional life which some individuals experience. For example, the joy of a happy occasion is tinged with the sad realization that the happiness will not endure. Music communicates this kind of emotional complexity. In Dabrowski's words:

> In the folk music and dance of many countries how much there is of vivacity, verve, excitement but at the same time of depression, sadness, and nostalgia both existing side by side and closely conjoined. The Polish dance "let us dance yet another mazurka today" expresses a "march into romanticism", into longing and transcendence, since this dance is very often the last dance before a battle, before death, and before departing into "otherness". (p. 113)

Copland (1952) like Hindemith, believes that music can only awaken higher emotions that are already a characteristic of the listener:

> It occurs to me to wonder: are you a better person for having heard a great work of art? In the largest sense, I suppose you are, but in the more immediate sense, I doubt it... What happens is that a masterwork awakens in us reactions of a spiritual order that are already in us,

> only waiting to be aroused. When Beethoven's music exhorts us to "be noble", "be compassionate", "be strong", he awakens moral ideas that are already within us. His music cannot persuade: it makes evident. It does not shape conduct: it is itself the exemplification of a particular way of looking at life. (p. 17)

Music sometimes arouses states of ecstasy and transcendental experiences. According to Maslow's (1968) research on peak experiences, one of the commonest means for attaining peak experiences is through music:

> So far, I have found that these peak experiences are reported from what we might call "classical music". I have not found a peak experience from John Cage or from an Andy Warhol movie, from abstract impressionistic kind of painting, or the like. I just haven't. The peak experience that has reported the great joy, the ecstasy, the visions of another world, or another level of living, have come from classical music--the great classics. (p. 72)

Multilevel individuals have a much greater capacity for joy as well as for sadness, although both states are complex. Dabrowski, in his theory, emphasizes the positive (developmental) values of anxiety, suffering and other "negative" experiences since they provide opportunities for growth that are often overlooked. However, since the experience of music is often extremely positive, joyful, or uplifting, it is important to note that Dabrowski (Note 2) reminds us that: "States of inspiration experiences of ecstasy and spiritual elevation, these have as deep and as important an influence on our development as suffering and agony" (p. 123).

Striving for Perfection

According to Dabrowski's theory, multilevel individuals sense the difference between the "higher" and the "lower" within themselves and begin to form a hierarchy of values. The striving for perfection--their concrete ideal of what it is to be human--becomes a major force as development proceeds. Dabrowski found that individuals at the highest levels of development converge on a similar set of values. In the domain of aesthetic experience he believes that professional training on one hand and a high level of human development, especially emotional on the other, is a sufficient and necessary condition to come close to a unanimous value judgment.

I would like to describe briefly the philosophic position described by Harry Broudy (1958) for music educators. It begins with the proposition that human nature is a pattern of striving for perfection. Secondly, the expressive qualities of music, as distinguished from the more specifically musical qualities, are the ones which bring music into relation with other areas of human life. One meaning of "greatness" is the way in which music does this. According to this view "music and aesthetic experience in general enable a man to recognize his striving to perfect himself. Human emotions are regarded as registers of human success and failure in this enterprise" (p. 72). In order to grasp the significance of music, one needs to know a good deal about life. "He who has not experienced directly or vicariously strivings against great odds, great longings, great victories and defeats, religious exaltations, and humility, cannot be expected to recognize their analogous motions in music" (p. 75). From an educational point of view, the implication is that different levels of appreciation may require different approaches and it may affect what can reasonably be expected in terms of appreciation at various levels of a child's development. Of greatest importance, is the cultivation of capacities for value. What about the objectivity of standards? Broudy says that the disagreement among experts is overemphasized. "Technical standards of performance, standards of composition, ability to achieve certain effects are remarkably objective as far as the experts are concerned. It is on the expressive level that their disagreement is so evident" (p. 83). In terms of Dabrowski's theory, if these experts were also at a high level of emotional development, they would be in close agreement regarding the expressive aspects of music as well. Broudy speaks of emotional readiness to hear certain kinds of music. For example: "The adolescent who has undergone puppy love and who is musically ready to listen to Tristan may by that experience become emotionally ready to hear the message of Tristan (p. 81). Broudy maintains that within any class or style of music, the connoisseur is our only reliable source of standards, but the ultimate justification for this position is that "in the long run the technically and formally good works of art will also have greater import for human life than the inferior sort" (p. 84).

The multilevel aesthetic attitude described by Dabrowski and Piechowski (1977a) is marked by the recognition of the relationship between music and human life. They speak of the understanding of one's own drama and that of others in aesthetic creativity, unharmonized reaches into the depth of human experience, elements of drama expressed in music, the need for finding and expressing philosophic elements in art, and "increasingly more distinct hierarchicization of values in art" (p. 146). At levels four and five there is a multilevel and authentic synthesis of many different kinds of art and many levels of art into one integrated whole. At the highest level, moral contents are clearly expressed, there is a high level of empathy in art, and "continuing development of great art embracing all levels of sensitivity" (p. 147).

There is one more author whose viewpoint on value and greatness in music should be described. That is Leonard Meyer (1967). His analysis of music in terms of information theory, for which he is well known, was outlined in Chapter Five. However, in his article on value and greatness in music, he reveals himself as a man, who in pursuing the basic nature and meaning of music, arrives at questions about the ultimate purpose of human existence. His analysis of music in terms of information theory implies that uncertainty is related to value. He then asks, "What is the fundamental difference between sophisticated art music and primitive music?" (He does not mean the highly sophisticated music that so-called primitives often play.) He concludes that the difference lies in speed of tendency gratification. "The primitive seeks almost immediate gratification for his tendencies whether they be biological or musical. Nor can he tolerate uncertainty". He adds, "It is not his mentality that is limited, it is his maturity" (p. 33). He discusses the syntactical relationships (embodied meaning) further and concludes that a direct one-to-one correspondence between complexity and value will not stand up. Some very simple pieces of music are better than some complex ones. Information, then, must be evaluated both qualitatively and quantitatively. The syntactical may describe excellence in music but it is not sufficient for judging the quality called "greatness". Meyer now brings in that second dimension of music--the expressiveness of music--and in doing so begins to talk of the type of musical experience which "transcends the syntactical". In bringing in this non-material dimension or "content" he leaves the concepts of information theory and also parts company with aestheticians who insist musical experience is devoid of content. In his words:

> We are considering another order of value in which self-awareness and individualization arise out of the cosmic uncertainties that pervade human existence, where man's sense of the inadequacy of reason in a capricious and inscrutable universe, his feeling of terrible isolation in a callous and indifferent, if not hostile, nature, and his awareness of his own insignificance and impotence in the face of magnitude and power of creation all lead to those ultimate and inescapable questions. (p. 38)

Here Meyer is describing the existential anxiety of Multilevel Disintegration. How does Meyer relate this to music? He states that great music makes us aware of these ultimate uncertainties--and at the same time ultimate realities--not just through syntactical relationships alone but through their interaction with the associative (expressive) aspect of music:

> This interaction, at once shaping and characterizing musical experience, gives rise to a profound wonderment--tender, yet awful--at the mystery of existence. And in the very act of sensing this mystery, we attain a new level of consciousness, of individualization. The nature of uncertainty too has changed. It has become a means to an end, rather than an end to be suffered. (p. 38)

In the final analysis, then, it is the profundity of the music's expressive content, which makes it truly great. Thus Meyer reaches the same conclusion as Dabrowski regarding "greatness" in music. Meyer goes on to discuss human suffering, which is usually regarded as evil but he believes that if an individual is able to master it through understanding, the suffering may ultimately be good. This is because "suffering may lead to a higher level of consciousness and a more sensitive, realistic awareness of the nature and meaning of existence" (p. 39). Then Meyer adds this insightful statement: "And the wonder of great art is this: that through it we can approach the highest level of consciousness and understanding without paying the painful price exacted in real life and without risking the dissolution of self that real suffering might bring" (p. 39).

Summary

The following summary will review some of the main ideas from this chapter under the headings (1) music and (2) experiencing music.

Music

1. Music is a tonal analogue of emotive life, broadly conceived (i.e. "inner life" or "subjective reality")
2. Musical compositions embody or are based on the composer's understanding of feeling (inner life, subjective reality)
3. Good music never degenerates into a mere display of emotion.
4. Music can express human experience at all levels of sensitivity or all levels of reality. Some music is appropriate for relatively simple, undifferentiated states and some expresses very complex states.
5. Inspired or great music is born out of emotional and intellectual conflicts (positive disintegration). It has the potential to make us aware of ultimate uncertainties and realities and for

bringing us to high levels of consciousness.

6. Some music is unilevel and some is multilevel. In other words some music is straightforward and expresses uncomplicated moods or emotions whereas the fabric of "multilevel" music is often characterized by varying degrees of complexity, subtlety, and seriousness. It may be partially grasped by some listeners and more completely grasped by others.

The Experiencing of Music

1. It is possible to "understand" emotionally as well as intellectually.
2. The nature of the listener's experience will be a joint product of the expressive potential of the music and the listener's capacity for appreciating the embodiment of these expressive qualities, feelings, or "realities".
3. At level one (Primary Integration) emotional capacity is limited. In this chapter it was stated that many responses which have been studied by psychologists could be achieved at level one because many studies have addressed only lower-order behaviors. (In introspective studies, on the other hand, the importance of the five modes of mental functioning as basic ways of experiencing music becomes apparent).
4. Level two (Unilevel Disintegration) includes Art for Art's Sake, the likelihood of strong social influences on musical preferences, and the possibility of the kind of self-contained musical development which does not engage the whole personality structure. A high degree of "musicality" (in the restricted sense) could

occur at this level. It would be musicality which involves intelligence but not the active, penetrating, creative, and intuitive cognition associated with a high degree of intellectual overexcitability and not the emotional depth associated with multilevel development.

5. Multilevel development involves an emerging hierarchy of values, inner conflict, existential anxiety, continued freshness of appreciation and striving for perfection.
6. Some writers, who are recognized authorities in aesthetic education or aesthetic development, (Broudy, Kneiter, Reimer, Gardner, Meyer) also associate higher levels of musical experience with capacity for emotion and for sharing feeling, and also with existential anxiety, conflict, great longings, and striving for perfection.
7. Meyer's statements at the end of this chapter exemplify a higher level of intellectual overexcitability (search for meaning) in connection with music. He suggests that through music we can experience the highest levels of human consciousness. This could happen only if the listener were capable of such an experience. Capacity for emotion, understanding of reality, ability to share feeling, and capacity for realizing value differ radically between the lowest and highest levels of development.
8. Finally, we would expect, based on the material in previous chapters, that certain modes of mental functioning would tend to predominate depending on the perceiver and partly on the music. (Different music emphasizes different qualities.) At higher

levels these modes may not be as distinct and the experience would be more likely to be of an intuitive-synthetic nature.

I would like to make one more point regarding music and the overexcitabilities. It is often said that education should involve the "whole child". Music is capable of providing an experience in which there is a nearly total focusing of psychic energies--an experience in which the centers of sense, psychomotricity, intellect, imagination, and emotion are brought together in a single, compelling aesthetic experience. Through music one can achieve a clear notion of the "experiencing self".

CHAPTER IX

EMPIRICAL RESEARCH ON MUSICALITY

The purpose of this chapter is twofold: (1) to give some examples of musical responses and to discuss them briefly in terms of the conceptual orientation which has been developed in this study, and (2) to provide some concrete examples of methods which might be useful for future research. The approaches used in this chapter are of two basic kinds. The first is called "Dimensions of Musicality: A Comparative Approach" because it allows for the comparison of the responses of twelve different listeners. These responses are interpreted in terms of the five basic modes of mental functioning. The second is called "Development of Musicality: An Individual Approach" because listeners are investigated on an individual basis and musical responses are interpreted from a developmental perspective. Since this study is primarily conceptual in nature, there is no extensive analysis of the material in this chapter. I do believe, however, that any one of the methods could be developed further and used for empirical research. The chapter concludes with some suggestions for future research.

Dimensions of Musicality: A Comparative Approach

In Chapter Seven, Dabrowski's five overexcitabilities were used as a basis for describing the dimensions of musicality. It was stated that these modes of responding could occur in relative isolation (in less developed responses) or could merge and become more inseparable (in more highly developed responses). We would expect one of these modes to predominate in the individual's response although the predominant mode might be much more difficult to detect in the case of a response which involves interactions among all five modes. Furthermore, the music itself must be taken into consideration. Different pieces of music capitalize on different aspects of musicality. For example, highly rhythmic music evokes a psychomotoric response, some compositions emphasize sensuous effects and some pieces of music are capable of evoking a response in which all five modes are brought to focus in a single experience. If an individual is characterized by great strength of several overexcitabilities, we would expect this to result in a heightened experiencing of music in general.

What I have termed the "comparative" approach was carried out to make it possible to compare many different responses to the same music. These responses were gathered from students registered in the Faculty of Education at the University of Alberta during the 1980-81 academic session. All of these students are prospective elementary school teachers and during this academic session were in the second or third year of the program. One component of this program is a course which focuses on teaching music in the elementary school. A part of this course involves listening to music for the purpose of developing listening skills as well as attention to the teaching of listening. I taught the course to three classes (87 students) and gathered musical responses from all of them. Since it is important to consider these responses in their entirety, only 12 of the 87 are included in this chapter.

Procedure

Seven musical excerpts, each less than five minutes long, were played during a 50 minute class period. Students were asked to describe their own experience in writing while listening or after listening to each piece. A short break (4 - 5 minutes) was given between each selection to allow time for those who were still writing to finish their description. This procedure was carried out on the second day of classes before any course content had been covered. Before beginning I made a few brief comments about the importance of being sensitive to the nature of a child's experiences and reactions during music classes. I told them that I was interested in learning more about the nature of their experiences when they listen to music. My instructions to the students were as follows:

> I will play a tape containing seven short selections of music. I would like you to describe the nature of your experience when you listen to each piece. I am interested not in a description of the music as such, but in your responses--your own experiencing of the music. Please include anything which is part of your experience--thoughts, feelings, associations--anything that enters into your experience. You may wish to mention whether or not the piece is familiar and whether or not you like it. It is not necessary to put your name on your paper. This is not an evaluation and I would like you to be totally open in your descriptions. This will help me learn more about how adults respond to music.

The whole class period (50 minutes) was used for this procedure. Accompanying this thesis (Appendix E) is a cassette tape which contains the seven selections (or excerpts from selections) which were used. They are recorded on Side 1 of Tape 1. They appear in the following order:

1. "The Swan" from Carnival of the Animals by Saint-Saens (solo cello with piano accompaniment).

2. "Trepak" from Nutcraker Suite Op. 71a by Tchaikovsky (A

Russian Dance played by full orchestra which gets faster and faster as it proceeds, finally exploding in a great crescendo of sound).

3. "Unsquare Dance" by the Dave Brubeck Quartet on an album entitled "Time Further Out" (This is a short jazz piece with an unusual rhythm 7/4. Brubeck describes it as a "conscious attempt to distill rather than magnify rhythmic complexity").

4. "Carmen Fantasy"--Bizet-Sarasate played by violinist Ruggiero Ricci with orchestral accompaniment. (Sarasate, a 19th century violin virtuoso composer arranges the principle airs from the opera Carmen by Bizet into an instrumental work with a Spanish flavor. Violin virtuosity is coupled with familiar tunes. An excerpt, not the full selection is used).

5. "God Bless the Child" by a group called Blood, Sweat and Tears --nine versatile musicians whose music is a wedding of rock and jazz. This song contains lyrics. (Only an excerpt is played--enough so that all nine verses of lyrics are heard).

6. "Two Rapid Formations" by Brian Eno on an album entitled "Music for Films". (It contains many unusual sound effects).

7. "Hope You're Feeling Better" on the album called "Santana Abraxas". (This is rock music arranged by Santana. It contains lyrics and only an excerpt is played.

These pieces of music were chosen because of their brevity and variety in terms of style. I included some items that I thought might be familiar to a number of students or which were in a familiar style. This was done because of the effects of familiarity and repetition which were discussed in Chapter Five. If a style is totally unfamiliar (as Leonard Meyer points out) it is difficult for a listener to "make sense" of the music. This might happen, for example, when music from another culture is heard for the first time.

A number of students wrote their names on their papers in spite of my assurance that it was not necessary to do so. I found, when I read the 87 papers, that it was not at all difficult to find examples of the five modes of mental functioning. The 12 descriptions which are included in this chapter were selected not only because they illustrate how the different modes manifest while listening to music, but also because these students were among those who wrote their names on the papers. During the first class meeting in this course it is customary to gather information about students' musical backgrounds. I had done this using the questionnaire which is given in Appendix D. By using student papers which included names, it was possible for me to divide them into two groups according to background. The descriptions which follow are organized into two categories. Category One includes responses from students with no formal training in music or minimal training (e.g. 2 or 3 years on an instrument during childhood). Category Two includes responses from students with 8 or more years of training on an instrument (or voice), who have some performing experience, and have studied some music theory. Several of these students have also taken university music courses and some have been teaching private lessons on an instrument. At the beginning of each description I have identified, in a word or a few words, the predominant response mode or modes. A brief discussion follows each description under the heading "Comments" but there is no extensive analysis since the intent is to provide examples of different responses in terms of the overexcitabilities.

Several comparisons can be made while reading these descriptions: (1) an overall comparison between Category One and Category Two responses; (2) a comparison of the responses of different listeners within each category; (3) a comparison of all 12 responses to any one of the musical selections; and (4) a comparison of the responses of just one listener to all seven pieces of music. These comparisons will be discussed briefly at the end of this section of the chapter.

Category One

The selections are numbered (from 1 - 7) to indicate which piece of music is being heard. They were played in the same order as listed and described above.

Listener 1: Psychomotor

Selection #1

- relaxing music--this type of music bores me for the beat is too slow and tends to make me feel sad rather than happy. Seems as if it could be off some romantic movie scene where the hero is coming to meet his love after some particular episode or period of waiting. This is not my type of music.

Selection #2

- music immediately grabs one's attention
- big band music
- tends to perk up one's spirits

Selection #3

- lots of guitar, my type of instrument
- very catchy tune. I tend to find myself tapping my foot and keeping rhythm with the beat
- this music gets my attention and I respond to it by keeping beat
- nice selection - familiar tune

Selection #4

- definitely hate this type of music and if were playing on T.V. I would for sure change the channel--no beat to this music.

Selection #5

- sounds like something off a Tommy Banks show. I find a beat to this tune and although this "big band" music is not my favorite, I do find myself tapping my finger and predicting what the next beat will be.

Selection #6

- music does not have a beat to it.
- this is relaxing music which is ideal to create a situation of fantasy.

Selection #7

- definitely dancing music the type you would find at a modern teen dance. Music demands you to keep a beat and maybe shake your body a bit
- my type of music. It is fast music like a Ukranian song or else country music.

Comments

This response is predominantly psychomotor. There are few references to feelings, imagination or other associations. Each selection is evaluated in terms of whether it has a "beat". Music which has a strong beat and provides a feeling of movement is preferred. Music which is slow or "relaxing" bores this listener.

Listener 2: Sensual/Intellectual

Selection #1

- violin, smooth, flowing perhaps harp, high notes give a tragic intonation, soft/sad, much variation in loudness of notes and length, piano.

Selection #2

- violin, tambourine, fast time, tempo seems to increase. Ukranian style or type two sections of musicians playing two distinct parts.

Selection #3

- bass, piano, clapping, reminds me of Aristocats, drum sticks on side of drum, two sets of drummers(?)

Selection #4

- violin, Italian type or perhaps Mexican. High pitch, change in mood several times.

Selection #5

- trumpet, saxophone, (?) guitar or synthesizer, drums (cymbals, tenor, bass, snare) blues, easy listening, trumpets in background--volume increase and decrease, tempo increase, much cymbals, tempo decrease.

Selection #6

- bells, cymbal roll, synthesizer(?), bass, eerie sounding, volume increase, cymbal tapping.

Selection #7

- electric organ, drums, cymbals, cow bell, guitar (electric), fast rhythm, tenor, bassdrum, cowbell (drum stick), loud.

Comments

This listener analyzes music in terms of its sensuous effects (instrumental timbres). For the most part attention is given to the identification of instruments (which might be regarded as a kind of "acoustical" hearing). Psychomotor elements (tempo changes) are also noticed. There is minimal attention to mood or feelings and the response, in general, lacks depth.

Listener 3: Imaginational

Selection #1

- This is a scene from a ballet where the heroine has lost her "lover" and has, to her own imagination, no hope of ever recovering the romantic rendevous. She is reflecting on all the tender moments she will never again experience. Her emotions peak to feel the futility of her situation and ends in quiet resolution.

Selection #2

- This is a chase scene where the good guy in the white hat is devastatingly out running the bad guy. He has that feeling of "thats showing them how to do it" and is very exhilarated at this accomplishment.

Selection #3

- The back ally after dark the "Jets" are on their way to the big rumble with the "Sharks". Adrenalin is building and spirits are running high. Each member is in harmony with the other and they will not miss the beat! (So to speak)

Selection #4

- The bullfighter with all his masculine wiles presents himself. He begins to seduce the aggressing bull. The bullfighter is light on his feet and possesses grace and style. With such magnificant powers the bull will lose all his senses and eventually come to defeat. With dignity of course.

Selection #5

- Self indulgent.

Selection #6

- It's dark, all the sounds of the night are closing in on your vulnerable soul. The lights flashing, sirens screeching, shady men in the doorway are all just part of the hazy surroundings. Desolute, depressed and alone.

Selection #7

- Arousing, seductive in the animalistic emotions. Appeals to the instinctive aggressions.

Comments

This response is predominantly imaginational with strong emotional elements as well. Most selections suggest a scene or situation to this individual as well as a certain emotional quality. Unlike Listener 1, this person does not evaluate the music in terms of one feature (e.g. "the beat") nor does this person analyze or identify instruments like Listener 2. Instead of judging the music, this person "enters into the spirit" of each piece using the imagination.

Listener 4: Emotional

Selection #1

-this selection makes me feel like I've just heard a sad story about someone's feelings. Someone who has just been hurt or let down and is now feeling very low keyed about it. Perhaps feeling that it is their own fault, and then at the end of the selection accepting what has happened.

Selection #2

-happy, excited and anxious about something I have just found out about. My feelings run away with the possibilities that this new discovery brings.

Selection #3

-movement, people together, excited about being together, and uniting in a musical effort to tell those around them.
- this selection is familiar, or it is similar to many of the tunes heard on commercials.

Selection #4

-an anxious journey
-a journey to deliver a message
-burdened by the responsibility of the message he bears
-then a rationalization
-then back to the burdened worry
-then anxious as he approaches the destination
-then the sadness while delivering the message

Selection #5

-a lonely thoughtful walk down a street
-passing by people, evaluating them, comparing

Selection #6

-space age
-discovering a new domain
-frightening, awesome
-slowly walking about, discovering, exploring
-an adventure, the fear slowly disappears
-the area is vast, indefinite

Selection #7

-gangsters
-mobs of teenagers
-hippies dancing
-flashing lights

- do not like it
- reminds me of loose, thoughtless, irresponsible attitudes
- seems to be music that attempts to draw away from reality.

Comments

This response is primarily emotional with imaginational elements. Every piece suggests a feeling (e.g. sadness, happiness, excitement, anxiety, loneliness, fear, etc.)

Listener 5: Emotional/Imaginational

Selection #1

- Relaxing, I immediately feel emotionally sad and wonder about a person walking alone or sitting alone thinking or feeling about different things--a death of a friend, a loss of something dear.

Selection #2

- Think of running--running animals--running water--a scene of a lush green forest--with the water rushing over everything. Or even a small animal being chased by a larger. It's almost like a chord inside me responds to the jumps and leaps of the music.

Selection #3

- I see a dance floor and dancers going through a routine in an empty hall. (Possibly back in the 20's)
- This music I just enjoy listening to.

Selection #4

- I just enjoyed following the notes. Did think of a mouse sneaking by a cat to get at some cheese.

Selection #5

- Can empathize with the singers feelings.
- Getting more and more relaxed, feel like writing less, withdraw more into thoughts, feelings and imaginings.

Selection #6

- Magical, eerie, an ocean crest, a beach, a turtle or whale call, whales playing, slow momentous movements calling out to each other, lonely.

Selection #7

-Horror house, Dracula on organ, animal lust, feel mean, aggressive, wounded, fighting back, climbing chaotic, a battle.

Comments

This is another example of a response which is primarily emotional but is combined with imagination. Most selections (except perhaps #3 and #4) evoke an emotional reaction from this listener.

Listener 6: Emotional Responses Related to Musical Events

Selection #1

-This piece makes me feel very sad. The long drawn out notes and softness of tone all contribute to this feeling. The occasional bursts of louder music tell me that the writer is expressing his feelings of outrage against something.

Selection #2

-What a different piece of music from the first one. I feel like getting up and conducting. What volume and range this band has! Very exhilarating! It was almost a shock hearing this one so soon after the first piece--my pulse raced and my fingers tapped.

Selection #3

-This was familiar but I couldn't name it. Lots of rhythm in this piece. It made me feel like clapping my hands. The musical instruments sounded so clear and precise--it was as if we were actually watching the performers instead of just listening to them.

Selection #4

-I loved the violins! Reminded me of "Fiddler on the Roof". At the same time I could hear the undertones of the rest of the band just barely containing their music and this rhythmic undertone added to the piece. This music, to me, contained a whole range of emotions to outbursts of joy and range to the quietness of peace, solitude and sadness.

Selection #5

-The first few bars of music reminded me of church music but this quickly changed and I thought of "blues" music. Then when the singing started I again realized the religious undertones.

Selection #6

-This reminded me of Halloween. Spooky sounding. I could hear the wind blowing through the trees and feel the bareness and bleakness of an old deserted house. I don't think I would enjoy listening to too much of this music.

Selection #7

-What a change! I like this kind of music but I have to be in a certain mood to listen to it--a party mood. It didn't do anything for me to listen to it in a classroom. The sound of the drums was something I particularly liked listening to.

Comments

Music also evokes emotional responses (e.g. sadness, exhilaration, party mood) from this listener but these responses tend to be related to events in the music. Here there is a combination of emotion and intellect with elements also of imagination and psychomotricity.

Category Two

The following responses were written by students with more musical background.

Listener #7: Psychomotor/Sensual/Intellectual

Selection #1

-Beautiful mellow strains of a well-played cello--romantic, delicate key changes sounds a bit like Chopin or Stravinsky--piano accompaniment nice variations in dynamic swells and falls. Lyric, soft--makes me want to dance slowly around a dimly lit ballroom cheek to cheek with the man I love, very pleasant and soothing.

Selection #2

-Tchaikowsky very familiar. I think its from the Nutcracker Suite possibly very exciting makes me want to jump around and sing along--can't be very calm--very invigorating, full of energy. Can't place it.

Selection #3

-Can't sit still, want to dance jazz--sexy--also very familiar body moves unwillingly--rhythm is very invading can't shut it out forces me to get involved, very precise but loose at the same time. Sounds a bit like Gershwin, typical jazz progression.

Selection #4

- Spanish sounding at first also makes me want to stamp around. I hate sitting down while listening to this kind of music good moving music--sounds a bit like a schottische or some other dance possibly a mazurka or something. Sort of very European, dramatic, excellent technique on violin, beautiful high whistling section--player is obviously getting into this piece of music.

Selection #5

- Brass ensemble--then good stage band--very big band sound very enjoyable to listen again I hate sitting down to listen to. Also familiar--I think our Sr. Stage Band played it in High School--very smooth and yet exciting, mellow music, my favorite out of the five so far. Slightly rock too but still good jazz. Good singer technique as well--delicate touch without cracking or wavering.

Selection #6

- Sounds slightly alleatoric--uses electronics to achieve effect, very spooky and sends a chill up and down my spine. Great! Sounds like something done by Pink Floyd or somebody like that. Eerie, tender, spooky, monotonous guitar background very interesting.

Selection #7

- What parents would say is typical rock and roll; loud, raunchy and monotonous, this stuff rather bores me now, doesn't take too much skill, singer is horrible, not too much in vogue nowadays, basic rhythm and chord progressions, squeaky guitar. BORING. Only good for background music at a party or something.

Comments

Psychomotor elements are very strong in this response. Most selections suggest some kind of movement. This listener is aware of instrumental timbres and makes several comments on an analytical (technical - critical) nature (e.g. "excellent technique on the violin"). There is also an awareness of musical style (e.g. "slightly rock but still good jazz"). The last selection, which is very simple and repetitive is "boring" to this listener. (In Berlyne's terms we would say it is below this listener's "preferred complexity level" or in Meyer's terms we would say that the music has "too little information" to interest this listener.) This listener is more "musically sophisticated" than some of the others and comments of an analytical nature predominate over imaginational or emotional components.

Listener 8: Intellectual/Analytical

Selection #1

-Serene, flowing melody played by violin. The broad legato line evokes a mood of Romanticism. Light piano accompaniment in the background adds to the general makeup of this piece. Many vivid pictures can be visualized. Expression from pp to f can be clearly heard as well as each of the phrases are broad and flowing. Very relaxing to listen to!

Selection #2

-Orchestral piece clearly representing some vivid idea. An energetic line displaying dynamics from p to ff. May be a symphony in which each instrument plays a distinct part in relation to other instruments. Climax is reached to a point of excitement which is achieved through expression.

Selection #3

-Jazz piece of music featuring the bass, piano and percussion. The melody alternates between the bass and the piano. Very much of a repetitious melody. Rhythm is distinct of a syncopated type and plays a major role in the development of this particular piece. This type of a piece could be used in a movement (dance) class to establish rhythm.

Selection #4

-Concerto featuring a violin soloist. The symphony accompanies the soloist. Dynamics are clearly expressed. The melody which the violin sustains is done smoothly and accurately. Percussion can be heard. Theme may be of a folk melody visualizing a village of some sort representing the customs, dances and traditions of the people. Quite a bit of Rubato can be heard also.

Selection #5

-More of a modern type of piece with electric guitar, elaborate set of drums. Variation of jazz with popular emphasis, featuring a male pop soloist. Rhythm changes constantly and the trumpet plays somewhat of an important role in melody.

Selection #6

- Many effects which give opportunity to visualize and evoke images. Percussion gives the image of a seashore where the waves are splashing onto the beach. As the dynamics increase, the mood is enlightened. Also someone walking through a jungle in Africa is what I visualize. The different sounds representing all the different animals of the jungle. As you get deeper into the jungle, awareness of the dangerous animals becomes noticeable. Clearly a good piece to develop fantasy and imagination.

Selection #7

- Rock music featuring some Band (have no idea - can't stand rock, how's that for positive!) I would imagine it's one of your popular Rock Bands. Because of the loudness of the music, I find it hard to understand the words. The electric guitar is featured This type of piece is very typical of what you could expect at a high school dance.

Comments

This individual listens analytically. Mood effects are mentioned and imaginational elements are seen most strongly in Selection #6. However, this listener focuses primarily on how various effects are achieved in the music.

Listener 9: Emotional/Imaginational

Selection #1

- I can imagine walking through trees with the moon out, just being with someone who is close to me--sharing thoughts and time, but not necessarily words. I could feel as if I am with someone close to me, and being old, and just thinking about my life and the things that have happened to me, I feel sort of nightmarish about this piece.

Selection #2

- On a holiday, just starting out driving down the road to new adventures. Very light-hearted and carefree--ready to give'er. My friends are with me.

Selection #3

- A spy movie--the characters are sneaking aroung dodging each other, while the rest of the world goes about it's business.

Not sinister--but a fun adventure of intrigue, different worlds and exciting people. There would be dancing or a lot of movement involved.

Selection #4

-A Spanish flavor--this would be a great piece to skate to (if I could skate), lots of action--it's like a person's life--really active, quiet, or just being there (at different times). Not boring--only boring people get bored with life.

Selection #5

-In a really ritzy club with palms and ferns hanging all over--champagne--guys with grey classic suits, ladies with long chiffon dresses--a jazz band with a black singer--reminds me of a Great Gatsby type of world--or in New York.

Selection #6

-Remote--the kind of music that accompanies dreams--in this dream there would be an ocean--it would be an unrealistic dream with fog and haze all over, and I would be walking on clouds--pretty ghostly--like a tour through someone's memory--seeing all the things they've seen and done--the rain is definitely there--just dripping off things--like the aftermath of a spring shower.

Selection #7

-You could dance to this--not like at a Saturday nite country dance, but modern dancing--the kind of music I used to listen to at parties. Reminds me of Deep Purple--and sitting in a crowded cabaret, lots of smoke making everything hazy, lots of people talking--not intimate conversations, but just letting people know that there are other people out there in the world.

Comments

Imaginational and emotional elements are combined in this response. This listener, in spite of a musical background, does not analyze the music.

Listener 10: Imaginational/Intellectual

Selection #1

-I feel that this piece is very beautiful. All I can see is a woman dancing in a ballet. The music suggests slow and flowing movement. It sounds like a lullaby. It sounds a little bit sad, like maybe the lady dancing has lost her lover temporarily. The instruments seem to be a cello or viola and the piano gently playing in the background.

Selection #2

- Very active music. It suggests maybe a sword fight between two gentlemen. It may also suggest pirates invading a passing ship to get to its treasure. The instruments are an orchestra.

Selection #3

- This music makes me want to move, get up and stamp my feet. I can see the stage filled with dancers dressed in black with their faces painted white, white shirts and black hats with bow ties. As they are dancing, they are clapping. The instruments seem to be a piano and a drum of some kind.

Selection #4

- Arabian music, (the violins in the beginning) camels moving over the desert or Gypsy music--a woman in a multicolored frock dancing about a fire outside of her caravan. It makes you want to move with it. The music suggests spinning round and round. The instruments I heard were violins, perhaps a bass and several others I could not identify.

Selection #5

- Very mellow music, easy moving, the blues type music. It makes me want to lie down on the sofa in the dark and do nothing but just listen. The instruments I hear are organ, trumpet, drums and more I can't identify.

Selection #6

- It reminds me of outerspace, or the depths of the ocean, noises sound muffled. It is an unusual sound, it suggests mystery. This music would be a good introduction song for a movie about something that is sunk to the ocean floor and someone wants to recover it. While this music is playing the camera is under water slowly moving among the fish and coral. It makes me feel good.

Selection #7

- Makes me want to dance, get up and move around. I can see the band actually performing this, the drummer drumming and the guitarist playing. It suggests a lot of activity. The instruments are drums, lead guitar, bass guitar, tambourine, etc.

Comments

This response includes visual and movement imagery. The intellectual component can be seen in the attention to identification of the instruments which are playing in each selection. The psychomotor element is present (e.g. "makes me want to get up and dance") and mood effects are mentioned in the responses to some selections.

Listener 11: Emotional - Mood Effects

Selection #1

-It makes me feel relaxed and peaceful and contemplative. Perhaps it best suits someone spending time alone with their thoughts and feeling on a moonlit lakeshore or under a starry sky.

Selection #2

-Makes my heart beat fast. I feel like running as fast as I possibly can! It makes me feel like laughing--definitely a happy, rejoiceful feeling.

Selection #3

-It makes me feel laid back, relaxed, easy going kind of a "do as you please" feeling. It makes you want to tap a toe or clap along.

Selection #4

-The music puts me in a Spanish setting at a celebration of some sort. It is a gala event. The music seems kind of "teasing", in a sense.

Selection #5

-The music makes me feel relaxed and thoughtful, perhaps thankful for good family and friends. It makes me look at myself closer and think about how others live.

Selection #6

-Makes me feel very isolated, in a very quiet tranquil place, (a deserted beach, a mountain side...) The sun is just rising and the sky is many colors. I am at peace with nature and with the world. It is not a lonely feeling but rather a peaceful and relaxed one. The music identifies with taking a slow walk and being fully aware of all the sights, smells and noises around you.

Selection #7

-I dislike this one. Makes me feel uneasy, angry or striking out against some kind of a frustration.

Comments

This listener interprets music in terms of emotion or the kind of feeling aroused. There are some references to psychomotor effects and visual imagery but there is no attempt at analysis in spite of the fact that this listener has a musical background.

Listener 12: Emotional

Selection #1

-When I hear this selection I feel melancholy, maybe somewhat sad, reflective. It is relaxing to me. I hear a love story being told of a person whose been jilted and feels sad or blue. It is a very moving piece to me. I could almost cry because it is so moving. I feel reflective upon my own life and my mistakes and heartaches.

Selection #2

-This one makes me smile. I feel invigorated and happy with life. I feel as though I could conquer the whole world. This makes me feel good about myself. I feel as though I have no worries or problems but as if life is a circus.

Selection #3

-The beat in this one makes me feel like moving. I feel like I want to dance. It makes me feel carefree and as if I have no problems. I liked listening to this piece, because it made me feel like moving to the beat. It sounds familiar.

Selection #4

-This piece reminds me of being in Spain or Italy or someplace like that during dinner and watching a festival later on. The background beat gives me a feeling of horseback riding. I enjoyed this song because it made me think of far off places.

Selection #5

- This song makes me feel mellow with the rhythm and blues feeling. I feel like I'm just sitting in a quiet lounge mellowing out. I like this music when I'm in a mellow mood.

Selection #6

- This song makes me feel like I'm walking alone through trees by the beach and hearing the breakers hitting the rocks. I feel like being alone and thinking out my thoughts. When I listen to this kind of music I think about life. Things from the past come back to haunt me.

Selection #7

- I think of a rock concert or of a dance. This music is good to listen to when you feel like partying because it matches the party spirit of being "wild and crazy". It makes me feel reckless.

Comments

The primary mode of response is emotional although some imaginational and psychomotor elements are present as well. Again, in spite of many years of musical training, this listener does not analyze the music.

Comparisons

Comparing the responses from Categories One and Two, it appears that different modes tend to predominate in the responses of different listeners whether or not they have a musical background. In Chapter Three, in the discussion of hemispheric dominance, it was stated that some research indicates that musical training seems to shift the brain's response from an holistic to a sequential, linear, analytical one. There seems to be some evidence of this (e.g. Listeners 7 and 8) although it is not true of Listeners 11 and 12. This suggests that whether or not training shifts the response may depend, in part, upon the overexcitabilities which predominate in a given individual. It might also depend on the type of training the person has had. For example, a course which involves listening and analysis would be more likely to encourage analytic listening than would piano or voice lessons.

From a comparison of responses within each category, it can be seen that different listeners approach music in very different ways and that the five forms of overexcitability are useful for describing these differences. In some listeners, one mode appears to be clearly dominant and in other listeners, the experience seems to involve several modes and a more inclusive kind of response to music.

If we examine all the responses to any one of the selections, we can see which elements the music itself seems to emphasize. For example, many listeners referred to "The Swan" as relaxing or sad, "Trepak" gave many listeners the urge to move or aroused movement imagery, and Selection #6 (film music) tended to evoke visual imagery.

Finally, if we compare all the responses of any one listener to all seven selections, it can be seen that a certain attitude (mode) tends to predominate for all or most of the selections. An analytical listener tends to take an intellectual or analytical approach to all pieces whe[illegible]n emotional listener tends to interpret all pieces in terms of the feelings evoked by the music.

With regard to future research, I believe this approach has merit. One disadvantage in the procedure I used was that all selections were covered within 50 minutes leaving little time for reflection and writing. Another possibility would be to approach listeners individually and have them discuss rather than write their responses. This would be very time consuming, however, and I feel that many people are more comfortable and possibly more open with their responses if they have the option of remaining anonymous if they choose to do so. I should also mention that most of the students appeared to have ample time to write. Many finished writing while the music was playing. Only a minority continued writing during the breaks between selections. The advantage of the approach I used is that many different responses can be compared. It would be possible to combine this method with follow-up interviews to obtain other kinds of information. For example, one could conduct an investigation of the relationship between musical backgrounds and the nature of the response or between musical aptitude (musicality in the restricted sense) and the nature of the response. Research involving school age children would make it possible to determine whether and to what extent the five forms of overexcitability provide a useful way of thinking about individual differences among children in their responses to music.

Development of Musicality: An Individual Approach

In this section I will describe the results of several methods I used to investigate musicality by approaching listeners on an individual basis. Since it was important to create a situation in which a person would feel free to reveal true reactions to the music, I gathered responses only from individuals who volunteered for this activity. Furthermore, listeners were given a choice as to whether they responded in writing, talked into a tape recorder, or talked to me directly. The responses of four listeners will be described, but the discussion of one of these listeners - Listener 13 - is much more extensive than the discussion of the other three. With Listener 13, I provide a more in-depth view by using several methods, including Dabrowski's Verbal

Stimuli Test. This person is a 21-year old prospective teacher. Listener 14 is a 38-year old banker. Listener 15 is a 10-year old boy and Listener 16 is a 6-year old boy. Two different procedures were used for Listener 13 and 14. A third procedure was used for Listeners 15 and 16.

Listener 13

Four methods were used for gathering information from this listener. First, she was given an opportunity to discuss her general background and attitudes in a relatively unstructured interview. Next the questionnaire in Appendix D was used to investigate her musical background and training. Several days later she was asked to respond to some items on Dabrowski's Verbal Stimuli Test. This is a test designed to tap the emotions by having a person respond freely to emotion-laden stimulus words. It has been found that these stimuli elicit responses which allow a fairly clear differentiation of emotional attitudes toward basic aspects of human experience. It is one method among several which have been used to assess an individual's developmental level. (The reader interested in a fuller elaboration of the research methods used for developmental analysis are referred to volume two of Theory of Levels of Emotional Development by Dabrowski & Piechowski, 1977b). Finally, I asked this individual to listen and describe her responses to music. I was interested in learning about the nature of her responses to music of her choice. To my knowledge, research in the past has investigated responses to music chosen by the researcher. Familiarity with music often enhances the responses (at least, up to a point). Therefore, I asked her to choose several pieces of music which she loved or to which she enjoyed listening, as well as one or two that she disliked, to listen to these pieces, and to describe her experience as she listened. She did this when I was not present (at home) and provided a written description of her responses as well as a cassette tape containing the music. This music is on Tape 2 (Appendix F) which accompanies this thesis. The information gathered using these four methods is given below under these headings: (1) background information; (2) music questionnaire; (3) verbal stimuli; and (4) responses to music. A short discussion follows:

Background Information

This individual is the youngest of six children. She worked on her father's farm "unofficially" all her life and enjoyed it immensely. After high school she attended a Bible institute for one year followed by two years at a junior college where she studied teacher education. She then came to the University of Alberta for the third year of her studies. She spent two years (9 weeks each year) travelling in a singing group to some of the eastern Canadian provinces and the United States. For three summers she worked at a residence for mentally handicapped children. She said that "This last year I was a temporary house mother for those special kids which was an experience I'll always remember."

Music has always been her main interest. She plays piano, trumpet, and loves to sing. She also loves animals, especially dogs. Her main goal in life is to be a good teacher "of whom the kids will hold fond memories (as I have of many of mine)". She also wants a husband and children. She said, "Well, I can always hope, can't I?" Her motto is, "If I love the world it can only love me back" or "It is better to be short and shine, than to be tall and cast a shadow".

Music Questionnaire

The information obtained from the questionnaire on musical background is as follows:

1. Activities in elementary school: unison and part singing, autoharp, recorder.
2. Grades 7 - 12: played trumpet in school band.
3. Private study: Piano to grade 8 (Royal Conservatory); Theory and harmony, 4 years; Voice, 2 years (no exam).
4. University courses in music:

    Music 216 - trumpet and brass techniques; some listening
    Music 250 - theory and harmony
    Music 229 - band ensemble
    Music 317 - brass techniques; trombone and tuba
    Music 329 - ensemble - choir
    Music 330 - choral techniques and conducting

5. Other activities: She has sung many church solos, and participated in church and school choirs. Also she has played trumpet solos and been in school band and stage band.

Verbal Stimuli

Before discussing her responses to the Verbal Stimuli Test, a short digression is necessary. Two of the methods used for developmental assessment--the Verbal Stimuli Test and the autobiography--require written or verbal responses from subjects. In a three-year study at the University of Alberta (1969 to 1972) the method used to analyze these responses involved dividing the written material into "response units" (the smallest amount of text which could stand out of context and remain intelligible). Each response unit was examined for the presence of dynamisms, precursors of dynamisms, (initial, weak manifestations), functions and overexcitabilities. Responses were then assigned a level out of nine possible levels (values such as I-II were given for interlevels) and a level index was calculated to indicate the average level of emotional functioning. Developmental profiles were constructed for different individuals. With regard to developmental levels Dabrowski and Piechowski (1977b) point out that because of the complexity of development, individuals are not usually found to be narrowly confined to one level:

> It may be said that every individual has a developmental "centre of gravity" or dominant level at which he functions emotionally and intellectually. He may lean away from this "centre" by engaging in behaviour on a lower level (e.g. aggression or the camaraderie of a stag party) or on a higher level (e.g. mood of silence and reflection, or genuine feeling of fellowship, compassion, helpfulness). Since almost everyone grows psychologically to some degree, we encounter residues of previous developmental levels and precursors of new levels--those toward which the individual is moving. This is especially true of accelerated development. (p.4)

According to these authors, an accurate analysis of developmental level requires a minimum of 100 response units.

My approach to the verbal stimuli will be more global. The material I obtained from the Verbal Stimuli Test provides for fewer than the 100 response units required for an accurate assessment. Therefore, instead of dividing the responses into units and analyzing each unit, I will provide comments beside each paragraph. These comments point to some dynamisms, functions and overexcitabilities. This will not be an exhaustive analysis and can only result in an approximation of developmental level.

The use of autobiographical and Verbal Stimuli in research is based on an interest in the manner in which an individual relates to life experience rather than the content of experience. In terms of the present study we are also interested in the manner in which the individual relates to musical experience. It was suggested in Chapter Eight that musical experience would differ at different levels of development and would also be related to the presence and strength of the overexcitabilities. A person undergoing positive disintegration processes experience at more psychic depth than someone at the level of Primary Integration. What Dabrowski calls the "aesthetic attitude" is different at different levels. The remainder of the material gathered from Listener 13 will be examined with a view to comparing responses to Verbal Stimuli and responses to music. It should also be pointed out that overexcitabilities are more easily detected at a younger age (i.e. based on memories of childhood) or at lower levels of development. This is because, according to the theory, as development advances, overexcitabilities are differentiated into dynamisms and are masked by greater complexity of experience (Dabrowski & Piechowski, 1977b).

Listener 13 responded to the following Verbal Stimuli: Great Sadness, Great Joy, Death, Solitude and Loneliness, Suicide, Inner Conflict, Ideal, and Success. Her responses together with my analysis are given below. The following abbreviations are used:

P oe	Psychomotor overexcitability
S oe	Sensual overexcitability
E oe	Emotional overexcitability
Im oe	Imaginational overexcitability

Int oe Intellectual overexcitability

S-o subject-object in oneself

Where levels are indicated, Roman numerals are used.

Verbal Stimuli

1. Great Sadness	Analysis
I think of times I've grieved over something I loved being taken from me. Having lived on a farm all of my life, I was able to have many animal pets. Cats were always having litters, 2 or 3 times a year. Obviously, for their own good, we have to "do away with many of them". Regardless of that fact, I would become very attached to them soon after they were born. Then usually in a few weeks, they would disappear (all except one sometimes). I would feel great sadness, knowing my Dad killed them.	E oe Affective memory and attachment to pets.
I also associated sadness with failure. I feel sad not getting the mark I expected; I feel sad in failing to handle a personal relationship the way I should, and I've also felt sadness in failing to fulfill the expectations my parents have of me.	III Dissatisfaction with oneself. Feelings of shame. Inferiority toward oneself. Feelings of failure.
2. Great Joy	
Joy is when I can let go and really be myself (crazy). Some of the greatest joy is when someone makes me feel good about who I am. A warm smile, a compliment, a gift or an unexpected visit from a friend gives me great joy.	Joy related to relationships with others and kindnesses freely given. E oe
The one special time I remember was when I received the only two Music Scholarships offered by the High School. I was the first person to receive both of them in my last year there. It was great to know people were proud of me. From that joy, another joy was born. My parents bought me a silver back Stradivarious Trumpet. The love of my life!	III Enthusiasm for aesthetic values.
I've also experienced joy in animals (especially my dogs, Coley and Barney, cat Muffin) and the many (10) nieces and nephews I have. February 29, 1980 was also a time of joy	E oe, Attachment to pets. Relationships with people bring joy.

because I got engaged on that day (although it didn't work out, it still was a great joy).

3. Death

I have a fairly positive attitude towards death. It helped to take a religious course at college on Thanatology (death & dying). I do not fear death for myself because I believe that with my personal decision to live for God, that I will have eternal life. Although I don't have all the answers about what or where that is, I have no fear about ending my life on earth.

Reflection is evident in her attitude.

The only close person to me that died was my grandfather, about three years ago. He really loved me, and I him. But after he had his stroke, I was glad he no longer had to suffer. I've thought about death in my parents or someone I really loved. I'm not sure how I could cope with it, but I guess life would still go on.

III Concern about death of others. Empathy.

4. Solitude and Loneliness

Somehow I don't associate the two very much. Solitude has a positive feeling for me. There are many times I love to be alone, be able to talk to myself if I want, do what I want, etc. I guess I need space for myself quite often whether it means going for a walk alone, lying in bed just thinking, or simply playing the piano for a few hours.

III Need for solitude.

Loneliness does not require "aloneness". I've often felt lonely with someone else around. If I can't talk to someone openly and have him feel as I do over a long time, I can be very lonely, although together with him.

III Search for true friendship often leads to isolation.

Loneliness suggests an emptiness - not having a part of me to share or not being able to share someone else's feelings. Generally I can overcome loneliness by solitude (if that makes any sense).

III Emotional ties.
E oe

5. Suicide

I've never attempted suicide, but I realize how people are led to do so. I guess it must seem like the only answer to escaping from tension, hatred, schedules, enemies,

Reflection.
Empathy.
Im oe

personal problems, and emotional upset. I'm sure if I never had a friend or God to talk to, I would have attempted suicide by now. I look on suicide as the easy, but wrong way out.

6. Inner Conflict

This entails so many emotions, it's hard to know where to start. I suppose my biggest inner conflict is love and respect for myself. This is usually what gets me down, when I cannot live up to my own expectations. Then I put myself down and generally do the opposite. For instance, when I cheat on a diet, I only eat more. It doesn't make sense, but when I can't live up to who I want to be, I have a lot of inner conflict.

III Multi-level conflict. Inferiority toward oneself.
S-o Hierarchicization.
S-oe over eating.

I also feel inner conflict when everything is going right but still am not totally happy. I feel frustration even more then, and generally overcome this by focussing on some good or future event to look forward to.

Emotional complexity.

One of the biggest inner conflicts I've had was with my boyfriend. We had gone together for over two years when we got engaged and there were no doubts in either of our minds that we were meant for each other. There was always some feeling within me that it was not quite right, though I had had the idea that love and romance were happy things, and so often I was not happy with him, to say the least.

E oe
III Emotional ties. Importance of exclusive bonds of love and friendship

About three months ago I had severe "INNER CONFLICT" and made up my mind then that we had to break up or our lives would be unhappy even more--perhaps forever. Anyway, I am glad to say that that was the best decision I've made in a long time and that inner conflict is gone.

7. Ideal

This is another hard one. To me ideal relates to happiness. My personal ideal is to be a good teacher, have a loving and considerate and fun husband and have some 4 kids of my own. I'd like to have a house on an acreage, so that I and the kids have room to grow, also so that we can have some animals.

E oe
Relationships very important

My true ideal relates to my parents, I would be satisfied and happy if I could maintain the loving relationship they have and bring up my kids the way they brought up the six of us.	III Identification

8. Success

This seems very similar to my idea of ideal. Success to me would be having a happy family life, having a home and some land to raise a family on, and having enough money so that we wouldn't worry about every penny. I guess having millions isn't my idea of success, because I know a lot of rich people who aren't very happy.	III Hierarchicization
With success, I can also associate a good slim figure, not biting my fingernails, having a classroom of kids that all love me, and picking out the right guy for me (or letting him pick me out?) Success seems like a very personal thing; I don't want to evaluate my success by other's standards, but by my own idea of success.	P oe biting fingernails. III Emergence of inner hierarchy of values

Emotional overexcitability is the strongest of the five and a number of multilevel (level III) dynamisms have been identified. This analysis indicates that the developmental "center of gravity" for this individual is at the level of Spontaneous Multilevel Disintegration. On this basis, we would expect her aesthetic attitude to be at the level where aesthetic experience is related to a person's life experience or to those of others (Dabrowski & Piechowski, 1977a, p.145). We would expect her response to music to have strong emotional components and there should also be some hierarchicization, especially in view of her musical background. Let us now turn to her responses to music. Her descriptions are given below and the analysis for each selection appears beside the response. The music is contained on Cassette Tape 2 (Appendix F).

Music I Love:

(Side I of Tape 2)

1. Frank Mills: "Sunday Morning Suite" (002-059)	Analysis
This is one of my most favorite musical pieces. I always feel very good while and after listening to it. One of the reasons why I love it so much is that it uses the two instruments I play, the piano and the trumpet, to their best advantage.	Preference related to instruments she plays
The beginning theme reflects a quiet, almost reverent mood. It reminds me of the church where I've spent many hours listening and participating in sacred music. It contains a lot of feeling in those first bars - both of humility and majesty.	Response to the emotion in the music: Association with church (Imagination, affective memory)
The next theme (a variation of the first) is so catchy, that I feel like singing or conducting it, or something! The full orchestration that joins the piano accentuates its happiness and joy, yet there is still a daintiness as the piano again solos.	Analytical: remarks on variation and orchestration. Psychomotor: wants to get involved.
At times the flowing line of the strings makes me think of swinging. We always had a swing in our yard, and as a kid, I spent many hours on it seeing how high I could go. Last summer we strung up a hammock in the same place and I would often relax in the sun on the hammock. This music reminds me of things like that--things I enjoy.	Affective memory: reference to childhood. Movement imagery.
The solo trumpet causes me to want to join in with a trumpet. I've always enjoyed being in a band and felt honored to get a solo part for the trumpet. It was a lot of work to practise tricky pieces, but it was always worth it at a performance.	Psychomotor: wants to get involved. Relates this to her own experiences
People have commented on my not being able to sit still, and I guess that's another reason I like this song. It is always moving and very alive. It speeds up and slows down in just the right places and ends in a grand coda. The last note of the organ reflects the determination of the piece to not want to ever stop.	P oe and response to movement in music. Some analytical comments.

This has been a favorite piece of mine to play on the piano, so I guess that has some bearing on liking to listen to it.

Preference again related to her experience of playing an instrument.

2. Burton Cummings: "I Will Play A Rhapsody" (060-102)

This piece again favors the piano but lyrics are an important part of the song as well. It expresses a feeling of love to me. I can visualize the singer as Mr. Right wanting to play a rhapsody and sing a lullaby just for me. The music is melodic and sweet and makes me feel really good. The chorus seems to invite me to sing another harmony part to it. I guess I like music that I can participate in.

Emotional response --feeling of love. Again the urge to participate in the singing.

This song first came out during the summer of 1978, I think it was, and it reminds me of that fall when I was attending College. It would often be on the radio as my clock radio woke me up. I would quickly turn it up then, and continue to hum the song over and over all day long, despite wanting to forget it sometimes. I still love the piece very much.

Emotional association with events in the past. Tunes appear to "stay in her head"--Probably indicates auditory imagery.

3. Bedrick Smetana: "The Moldau" (102-127)

This is a fairly new piece to me, but I loved it from the first time I heard it. This section of it reflects the river flowing along, often rushing up over some rocks that try to stop it from going any further. It contains some mystery in the background music, yet the overall effect is peaceful and serene.

Emotional--she loves the piece and also senses the nuances of feeling it contains.

It reminds me a lot of the river that our farm is situated next to. It is usually very calm, but can become very powerful when the ice breaks, or when it floods our land. In a way it also reflects me, because I can change from a sweet, quiet person to an agitated, cranky one suddenly without much notice. But generally, like the music portrays, I can again become very gentle and passive without too much trouble (?)

Association with river at home (Imagination and emotional), Sees her own personality in the music.

4. Ludwig Van Beethoven: Symphony #5 in C- op. 67
(Allegro con brio) (128-164)

This familiar piece portrays power and excitement and I especially like the contrasts in the instrumentation, and volume and the intensity.

The emotional feeling here is related directly

It can be very bold and majestic and suddenly be very light and dainty again, leading up to a grandiose feeling.	to musical elements in the piece.
I like the confidence it presents. There is nothing insecure or timid about it. It moves on to more and more strength, never regressing. I like listening to this type of music when I feel down or happy, because it tends to cheer me up, regardless. (I find it hard to write about this song. I just like to listen to it and enjoy it).	She senses the confidence, strength but the power of the music draws her away from the task of description. It appears that she becomes too "involved" to be able to write (Aesthtic responsiveness)

5. Jan & Dean: "Surf City" (164-201)

A big change from Beethoven to say the least. I was fairly young when the Beach Boys were popular, but a lot of their music, much like this, has stuck with me. It was the music I listened to the most in junior high. Probably peer group pressure enticed me to listen to this more than anything else.	Reflects on peer influence on preference. Relates to junior high experiences.
At home this music was looked down on by my parents, so memories of it do not relate to life at home, but more to do with school, friends, etc. This song reminds me of a boy who I used to like (but not much more than a friend). Anyway he was one of those lucky guys to have an old car and an eight-track player in it. This music made many trips up and down main street day or night.	Emotional association with a specific person.
I enjoy 'periodically' listening to a few old tapes, but in my old age, too much of it is annoying, and frankly, drives me crazy.	Hierarchicization. Reflects on her changing taste.

6. Simon and Garfunkel: "Bridge over Troubled Water" (202-279)

This music may be outdated to some extent, but I still like it. This song is most meaningful because of the lyrics and the way they are sung. I often feel a little down and I can feel some sympathy from this song. The music is peaceful and very emotional - almost a "yearning mellow". Again it is a song I love to sing with because of its harmony and understandable lyrics.	Senses both the emotion expressed in the music and its effect on her. Part of meaning resides in the lyrics.
I am reminded of my sister when I hear this song, because she thought it was the greatest when she	Reminds her of a specific

was a teenager. I like the melody line because it seems like it really has something to say.	person.
7. Elton John: Variation on "Friends" (280-299)	
This is peaceful and calm--music to relax and listen to. This is the type of music I like having in the background while visiting or dining. It doesn't have too much movement, but is flowing and gentle. It makes me think of people I like being with. I think of one person in particular who always makes me feel good about myself. I can visualize the two of us walking along the shore of a lake just talking about anything. The melody somehow reminds me of birds such as sandpipers, and gulls who are free to roam the beaches as they please.	Mood response. Differentiates background music from other music. Reminds her of certain people, visual imagery.
8. Sonata #14 - Beethoven: "Moonlight Sonata" (300-413)	
This music puts me to sleep, or at any rate, totally relaxes me. If I had to choose any piece to play at a piano recital, it would be this one. It holds so much emotion within it. Depending on how I feel, it can make me happy or sad. When I was upset and listened to it, I almost started crying, I guess because it kind of consoled me. There have been other times when I simply listen and reflect on anything at all and it is very inspiring. This song seems to take on many colors of emotion. As I listen to it I can envision a funeral, or something sad, and yet it is so beautiful, it is more like a fairy dance.	Psychomotoric or physiological effect--relaxing Differentiates between the emotion in the music and its specific effects on her emotions. E oe--strong emotional reactions ranging from "crying" to "inspiration".
9. Eagles: "The Long Run" (414-495) (turn down the volume!)	
I used to like this song more hearing it infrequently on the radio, but when hearing it after "Moonlight Sonata", it seems to have lost some flavor. I don't dislike it completely, but I have to be in the right mood for it. Sometimes I like the heavy brass beat because it is so regular and fun to do exercises to (if so motivated).	Hierarchicization. Recognizes the psychomotoric appeal but sees Moonlight Sonata as "better".

Overall I prefer more classical or mellow songs to listen to, although after it becomes more familiar I can listen to any type of music. This song just seems a little too "heavy" for my taste.

Intellectual--reflection on her tastes.

Music I Do Not Love:

(Side 2 of Tape 2)

1. "Werewolfs of London" - Warren Zevon (001-041)

It has some rhythm, but not much variety of any kind. The lyrics are repulsive and certainly are not very musical. This song gets on my nerves to say the least, and listening to it more does not increase my love for it.

Hierarchicization. Recognition of "lower" and "higher" in musical expression. Also below her "complexity level" both intellectually and emotionally.

The music is so repetitious and simple that it becomes very monotonous, despite the "howls" that are heard every so often. One reason I am probably turned off by this music, other than what has already been mentioned, is that it is usually performed by non-talented rock musicians who are out to make their money with glitter, weird lighting and unique props. Obviously, I am not the typical rock fan.

2. Igor Stravinsky: "The Rite of Spring" (042-071)

I dislike this type of music because it is too strange. It generally reminds me of science fiction movies which I can sit through but don't usually enjoy. It expresses antagonism and some destruction taking place. Music is something positive and generally happy to me. Perhaps I am a traditionalist at heart, but I fail to find this piece very musical

Preference related to emotional effect: She prefers music without too much tension.
Some visual imagery.

In some sections, I can think of a gunfight about to take place in a western movie. There's too much tension involved to be good music.

PS: (It is possible! ; there are some kinds of music that I dislike!)

In his discussions of the aesthetic attitude Dabrowski speaks of preference for uncomplicated, hard beat rhythms of dance, loudness, strong voices as well as sensitivity to ostentatious splendor and utilitarian beauty at level one. He places the attitude of "art for art's sake" at level two. Neither of these descriptions characterize the attitude of listener 13. For her, music is humanly relevant and she tends to relate the music she hears to her own experience. In other words, her "aesthetic attitude" is characterized by qualities which would be expected to occur at the level of Spontaneous Multilevel Disintegration.

With regard to the overexcitabilities, the emotional form is the strongest and the psychomotor component is also strong. These two elements help to determine her preferences. She differentiates between the emotional flavor of the music and her own emotional reactions to some extent and seems to have definite preferences based on the emotional component. Her own psychomotor overexcitability combined with her performance background results in her urge to participate in the music. Occasional references of an intellectual (analytical) and imaginational nature are to be found in her description. She mentions some of the events in the music, but the experience is not primarily an intellectual (analytical) one for this person. The intellect is used more to reflect on the nature of her experience. With regard to imagination, a distinction has been made between auditory and non-auditory imagery (See Chap. VI). It is likely that imagination manifests primarily as non-auditory imagery in this listener since this is central to the musicianship of practising musicians as Seashore and others have pointed out. It is difficult to determine the extent of non-auditory imagery from the type of description given above. The aptitude tests which were described in Chapter Three (Seashore, Wing, Gordon) each contain a subtest for tonal memory (tonal imagery). They would provide a much more direct measure of auditory imagery.

This listener has one more characteristic which contributes to her responsiveness to music. During the course of this thesis several references have been made to the openness of young children to aesthetic experience and to the phenomenon of retrogression which so often follows early childhood resulting in a sharp drop in aesthetic sensitivity. However, some individuals retain these positive qualities of childhood or perhaps regain them during adolescense or adulthood. Dabrowski and Piechowski (1977b) compare the traits of Saint Exupery (level IV) with the traits of self-actualization as described by Maslow. Some of these traits include spontaneity, continued freshness of appreciation and the ability to "appreciate again and again, freshly and naively, the basic goods of life with awe, pleasure and wonder..." (p207). This phenomenon is sometimes called "regression" or by the psychoanalysts, "regression in the service of the ego" because they see it as adaptive. In Chapter Five it was noted that regression in the service of the ego--the ability to escape temporarily from the usual logical restraints of adulthood and take an interest in playful, imaginative things, is often held to be important for artistic appreciation. Dabrowski discusses what he calls the "positive" form of infantilism or immaturity:

> Infantilism denotes a combination of mental and emotional characteristics which, in their developmentally positive form, are associated with openess, naivete, trust and emotional sincerity usually encountered in children but far less in adults. (Dabrowski & Piechowski, 1977a, p.201)

This kind of developmentally positive infantilism is absent in adults who are still at the level of Primary Integration. Instead of creative, childlike characteristics there is emotional underdevelopment.

Listener 13 appears to possess some of the characteristics of positive immaturity which contribute to her musical responsiveness. She refers often to the joys of experiences during childhood (e.g. love of pets) and does this also in connection with music (e.g. memories of swinging; the river near home). She delights in these "basic goods of life".

Dabrowski (1973) discusses the effect of these positive childlike characteristics in connection with adulthood.

> Positive mental immaturity occurs in such mental functions and structures in which there is a distinct richness of immediate, sensitive, creative, infantilism and which is, only in a small measure, dependent on the biological life cycle; but appears in later periods of life and takes a fundamental role in accelerated mental development, especially in the development of creative talents, authenticity, and striving towards ideals(p.155)

He points out that these characteristics can be observed in some great creative individuals such as Chopin, Shelley, Kierkegaard and many others. Dabrowski and Piechowski (1977a) state that "poets and musicians who manifested strong infantilism abound" (p.203). With regard to musicality we would expect that positive immaturity would enhance aesthetic responsiveness and my general impression of listener 13 is that some of these qualities enter into her musical responsiveness.

In general, the method used with this listener has the advantage of providing a more in-depth view of one person. I feel that asking her to respond to music of her own choice resulted in a richer description of her responses and provides greater insight into the nature of her musical experience. This approach could be expanded into a full case study which could include a more accurate assessment of developmental level and more extensive analysis of musical characteristics and experiences. This listener, who has a performance background, could be described as musical in the restricted sense (i.e. she would probably score well above average on any aptitude test and may also have a good conceptual grasp of music). The procedure I used provides insight into her musicality in the broad sense. Another possibility for future research would be to compare the musical responsiveness of individuals at different developmental levels.

Listener 14

Listener 14 is a 38-year old businessman who had ten years of piano lessons and a few voice lessons during childhood and adolescence but who did not continue to play to any extent after adolescence. He is a "music lover" but his musical activities are now confined to listening. He has a large record collection including folk and popular vocal music, country and western music, some rock (mostly of the sophisticated kind) and jazz. He does not listen to classical music ordinarily.

My approach with this individual involved playing a selection several times and having him describe his responses verbally. I chose a selection which was very different than the type of music to which he usually listens. I used "Dance of the Mirlitons" from the Nutcracker Suite by Tchaikovsky. This music appears on Side 2 of Tape 1 (Appendix E) which accompanies this thesis. The procedure used with this listener differs from the approaches described with the first 13 listeners in that

I participated by asking a few questions. I had two basic purposes: (1) to learn about the nature of his response and (2) to provide some information about musical structure during the third hearing of the music and to note his reaction. This second purpose is related to the educational practice of drawing the listener's attention to the structural events in the music on the premise that this will enhance responsiveness. In terms of the broad concept of musicality which has been developed in this thesis, we might expect this procedure to have different effects on different listeners. The listening session is described below

First Hearing of the Music

My instructions were: "Please listen to this piece of music and tell me what your experience is--your thoughts, feelings, perceptions, anything that enters into your own subjective experience of the music". He decided to talk after the music was over since he felt that talking while it was playing would interfere with his ability to listen. This was the description he gave after listening the first time:

> First a big heaviness with bass low down--boom, boom,--then at the same time lightness as the toodlee-doos came in up above. This felt relaxed--felt like draining--tension draining as pattern became familiar--and heavy and light at the same time--heavy, light, yet blended together!
>
> I'm feeling fairly well relaxed then it got disturbing and the pattern broke--not the easy-to-listen-to music like before--sort of uncomfortable--the relaxing pattern was being upset. This feeling didn't go away until the familiar part returned--clip clopping along. The beginning was simpler. When it came back it was more complicated. I liked it.

One of the most noticeable features of this response is the high degree of auditory imagery which is present. Although the music was unfamiliar to this listener, he was able to recall and describe it in some detail after the first hearing. I noticed a few tears in his eyes as he recalled it. He "relived" the music not only in the sense of "inner hearing" but also emotionally. I asked him: "Can you hear the music?" He replied: "Yes, I can bring it back (especially the first part) in my imagination". He then continued to describe another aspect to his response:

> My association was something on the stage--a big lumbering thing and light flitty things--not clumsy--orderly--but robust and energetic and yet together.

He said that this image came to his mind initially but he soon abandoned it to focus on the music. The image came back later during the piece:

> Then a disturbance, break-up of the lighthearted friendly kind of dancing--opposing. Later the "togetherness" resumes. They protect each other as they continue with their dance. I don't know what's causing the disturbance--something sinister. If choreographing this music--this is how I'd do it. Maybe its something I've seen?

He thought the music might be vaguely familiar, but he could not place it. Then I asked: "Can you remember any of the instruments?" He replied: "Bass, clarinet or flute". I asked him to listen again and describe the music itself (e.g. the instruments).

Second Hearing

This time he responded as the music played:

> I hear a flute--several flutes--bass--violins came in--a harp--then a wind, bassoons or something --violins chopping away. Middle part: percussion and brass instruments which are more abrasive.

After the music was over I asked him if the rhythm was duple or triple (in 2's or 3's). He couldn't tell me immediately, but brought the tune back in his imagination and then told me the correct answer. I then provided him with a brief written description of the music:

Introduction; Pizzicato string vamping
A Flute trio; main theme
B Flutes now joined by legato English horn phrase
A Flute trio again but now imitated and accompanied by strings
C Trumpet duet twice, the second time with help of the rest of the orchestra. (Clumsy in contrast with the light flute trio)
A Flute trio again as in the second version.

I asked him: "If you listened again, how do you predict this knowlege would affect your response? Would it add to it or detract from it?" He replied: "I don't know. I suppose I couldn't really forget it". I asked him to listen one more time to see what the effect would be.

Third Hearing

He responded after the music had finished playing:

> I think I enjoyed it more and listened for the things you told me. The disturbing part sort of fit better. I listened for the violins echoing--they didn't really echo exactly, it was a different pattern--their tune was different. I liked it more.

Discussion

In general, this person's responses to music are fairly well developed and well integrated. In the first description there is an interaction of feeling and perception together with some visual imagery, which he abandoned when he wished to concentrate more fully on the musical events themselves. His description reveals attention to musical detail although he did not have the technical vocabulary to describe some of his perceptions. The intellect was active and it seems more appropriate to describe this intellectual activity as perceptual rather than conceptual. For example, he was well aware of the overall form (three main sections) of the music but he did not call if "form". Also he noticed that when the violins echoed the flutes, their tune was not an exact repetition of the flute tune. He was moved by the music even when recalling it in imagination. The nature of the movement in the music suggested a dance (movement imagery) to him.

By using questions or "probes" I was able to uncover other aspects of the response. Through this method of "stimulated recall" he identified the main instruments and the rhythm. His awareness of the sensuous aspects (instrumental timbres) was integrated into a more inclusive kind of response. He heard them but other aspects of the music had more salience for him. He listened, not merely acoustically (with emphasis on identification of sounds) or merely intellectually (analytically) but what we might call musically, intuitively and emotionally. His awareness included both the material (objective) and non-material dimensions. This is listening which could be called "conscious" and is an example of a well developed degree of musicality in the broad sense. His openness to the description I provided is related to his ability to derive enjoyment from the events in the music. His listening is sufficiently intellectual that he could use this information and yet is sufficiently musical that he could immediately integrate this material into a broader response. In his case the information enhanced his response rather than detracting from it.

This listener did not prejudge the music. Even though it was not the kind of music to which he usually listens, he was open to the experience, he "felt" the way the music "made him feel". He was able to share in the music freely and did not count on mere "liking" as the only pay-off of the encounter. It was an active experience to which he brought something of himself. It was a highly focused experience and his own investment included feelings, intellect, as well as the other modes of mental functioning. His statement about liking the music was made only after he had allowed himself to experience it fully.

As a technique for investigating musicality, this approach has the advantage of allowing the researcher to ask questions, to direct listening thus revealing certain aspects of the listening experience that might not be mentioned by the listener. No attempt was made to relate this person's responses to emotional development but this could be done using Verbal Stimuli or autobiographical material, or both.

The information obtained from the next two individuals--listeners 15 and 16 will not be analyzed to any extent. They are included primarily to provide examples of responses of children to some of the same music and the same Verbal Stimuli which were given to adult listeners. My descriptions of the children themselves are based on my own observations and impressions.

Listener 15

This listener is a 10-year old boy who has never had any formal training (music lessons). However, he has a collection of records and tapes to which he listens quietly and attentively. He rarely mentions the music which he has taken in school as a part of the elementary curriculum. This child has experienced considerable emotional upset, including several deaths of close loved ones, but he has never been inclined to display emotion overtly. He does not talk easily about his feelings and at present is somewhat bitter or cynical at times about life in general. He responded to several Verbal Stimuli as well as the seven selections that were played for the first twelve listeners described in this chapter. He responded verbally, and I asked certain questions during the procedure. The results are given below.

For the verbal stimuli, my instructions were; "I am going to give you several words. For each word I would like you to tell me in a sentence or a few sentences how you feel about each word. You can tell me things that have happened to you for each word".

1. Sadness:(The thing that has made you saddest)

   I hate that word! Sadness makes me angry! Grandpa died.

   Are you ever sad for anyone else?

   Yes. I'm sad for Gram when she doesn't feel good and for Mom--when she lost her purse--and when something bad happens to her. Sometimes when I'm sad I take a nap and when I wake up I feel better.

2. Great Joy: What makes you the happiest?

   The trip to Disneyland! Getting my new bike. Going bike riding on a nice day. Christmas, Skiing, Swimming, Canoeing, Camping. Buying a new toy. When we got Eskie [a dog] --I love him.

3. Solitude: How do you feel about being alone?

   I like being alone when I'm sad, and to think sometimes. I don't always want to be with people--only when I'm happy.

4. Success: When do you feel the most successful?

   Whenever something works--such as a good mark--an A+ in anything. Controlling my dog because he's hard to control. [The dog is bigger, stronger, and more active than the boy so it is hard to take him for walks]. When I put my new bike together. When I win a swimming race with my friend. When someone is chasing me on my bike and I outsmart him (hide somewhere).

5. Nervousness: Do you sometimes feel nervous?

   Yes--when I'm misplaced. Also when Rebel [a doberman] fights with my dog. Oh--and during a wild ride at the exhibition.

6. Inner Conflict: Do you ever argue with yourself about things?

   Yes. For example when my friend was taking apart my fort and I had to watch him but I couldn't do anything about it--

> something was holding me back.
>
> I have inner conflict about whether I should fight about something or not.

When I asked him to listen to the music, he listened without comment and gave me his reactions after the selection was over.

1. The Swan:

   It's not my style. One reason is it doesn't have any words. I just don't like it--unless it is played for background music.

2. Trepak:

   Not very good. It didn't make any sense.

   I asked him if it made him feel like moving and he replied "No".

3. Unsquare Dance:

   It sounds like the music you'd hear in a silly commercial. I think I've heard it on a cracker commercial.

4. Carmen Fantasy:

   Lousy; Irritating. I didn't like the sound of the instrument--too high. My mind kept wandering off and I kept thinking about something else besides the music because it was irritating me.

5. God Bless the Child:

   That one was good. It had more to it than the others. The words didn't make all that much sense, really, but I like the instruments and the style of the music better.

6. Two Rapid Formations:

   Not the sort of music I'd like to sit down and listen to. I think it should be used as background music to a movie or something. Its kind of dreary. It would be good for exploring a damp cave or something.

7. Hope You're Feeling Better (rock music)

   It doesn't make any sense to me. It's too much out of control. It's weird.

I then asked him to tell me about his preferences in music. He generally likes music with words unless it is background music. His preferences for music (and instruments) are definite. For example, he likes a western guitar better than electric guitar because the electric guitar has "too much vibration" and bothers his ears. He likes several songs which date back to his early childhood as well as certain themes from movies and television. Whether or not he likes rock music depends on the style. He does not like the kind which he describes as "out of control" and believes some of the older styles (Beatles and Elvis) were better. Two of his favorite tapes are "War of the Worlds" (which takes up both sides of two long play records and has some narration but lyrics only in certain parts) and Kenny Rogers songs, especially "Coward of the County" (I noticed that the words of this song refer to a 9 year old boy whose father died. This child had the same experience at the same age). Sometimes when he listens he gets a "scene in his mind".

In general, this child's approach to music seems to be more intellectual and critical than emotional. His preferences are very definite and the effect of social influences (movie, television) is apparent. He has some awareness of style and dislikes music which he considers "out of control" or which "does not make sense" to him. While listening he is motionless. Developmentally he would seem to be at the stage where operational thinking leads to a more "abstract attitude" or a more "distanced" relationship to music, which, as Gardner points out, may be "less effective in revealing the work than the unmediated relationship that younger children have" (see Chap. VIII). This child is still especially interested in some music and is attempting to learn certain pieces

(Coward of the County) on the ukelele. In terms of development of musicality, we might conjecture that future growth will occur to the extent that he can regain the open attitude of childhood (positive immaturity) so that he does not close off possibilities for aesthetic experience by prematurely judging the music and to the extent that his emotional development enables him to appreciate the non-material (expressive) aspects of music.

Listener 16

This 6-year old child has a collection of tapes and records which he loves and although his attention span for many activities is short, he can listen to long pieces of music (e.g. War of the Worlds) from beginning to end. His responses to the Verbal Stimuli and the seven selections are given below.

1. Sadness: Things that make you the saddest.

   When my Mom dies [Here he is anticipating--his mother is alive] When my best friend moves.

2. Great Joy: What has made you the happiest?

   If I could have a whole shopping centre to myself--half as big as Southgate. The thing that made me the very happiest was going to Disneyland.

3. Solitude: How do you feel about being alone?

   I never am. I'm always with somebody. Always! Sometimes I want to be with people and sometimes I want to be alone.

4. Success: I was unable to impart the idea of success. He seemed to have no concept of success.

5. Nervousness: Are you sometimes nervous?

   Yeah! when I have a bad dream.

6. Inner Conflict: Do you ever have trouble deciding things or argue with yourself?

Yes. I argue with Charlie. He is inside of me. I don't
like him but he likes me. He doesn't know things. I
teach him things. He's the one who is always wrong.

When I do something bad sometimes I wish I hadn't done it.

The responses to music were given verbally. He tended to talk as the music played.

1. The Swan:

This song seems to be a bit familiar. It's a nice song.
Sort of sad.

2. Trepak: (During this piece he started spinning rapidly on a stool)

I like this one. It sounds like a parade. It was a
short one. Why was it? It was an orchestra.

I asked him if the music made him feel like moving and he replied "Yeah!" enthusiastically.

3. Unsquare Dance: (He tried clapping along during part of this piece)

People are clapping; a piano, bass. I'm listening carefully 'cuz I hear that it sounds like sticks hitting a pot. [At this point he put his ear right up to the speaker and listened] I like it. Good! It was one of my favorites because of the instruments.

4. Carmen Fantasy:

Trumpets - a fiddle, violin, bass instruments.

5. God Bless the Child:

I know this one! I've heard it before - it's on the tape Blood, Sweat and Tears - I hear bass, trumpets. I like the tune. I've seen the guy that sings this on t.v. I like it. What happened? Why didn't it finish? I wanted to hear the rest of it!

This child is the only one of the listeners who reacted to the fact that the music was unfinished. He had a keen sense of this feeling of incompleteness and it was very annoying to him.

6. Two Rapid Formations:

> It is different! It sounds a bit familiar. [He tried to place it] It's spooky. [He was amused by parts of it and laughed aloud] It sounds like we're in a haunted house and I imagine pictures of it. I hear bass. Can we play the whole tape over again--all the songs?

7. Hope You're Feeling Better: When this music began he laughed aloud. I asked him if he could understand the words and he said "No!" He added "It makes my legs move up and down". I asked him what he thought of the music and he replied: "No, I don't like it one bit! I don't like the tune and everything!"

I then asked him what music he liked. He took me to his record player and began playing his favorites--commenting on each piece. He would have done this for hours. Some songs he likes because of amusing words and yet some music (e.g. War of the Worlds) he likes even though there are no lyrics for much of the music. Here are some examples of music he played for me. He said "First, I'll play my silly songs. Boy, you should hear them--they're really silly!"

Ballad of Irving: Do you thing it's really funny? I like it 'cuz it's really silly. I like the words and the music part and I like the name "Irving"

Martian Hop: I like the way they sing and the tune too. (He showed me a picture of three green Martians).

Alvin's Harmonica: I like the harmonica and what they do with it and the words and the tune. [He laughed at the word "harmonicorn" repeated it once, and began dancing around the room, pretending he was playing]

Pink Shoelaces: I like the rhythm, the sax, the words, I like everything!

Discussion

The responses of this child are, in many respects, very different from those of the 10-year old child. The 6-year old still has the freshness of appreciation, openness, and imagination characteristic of young children. He was more open and accepting of the music I chose. Both boys have definite preferences, and in terms of rock music, both preferred the more sophisticated (Selection #5) to the loud, repetitious rock music (Selection #7). The younger child tended to draw attention to events in the music and to instruments more than the other child and was more openly emotional. He would seem to possess a high degree of auditory imagery since he could easily recall tunes and was quite upset when the one he liked did not finish. Since "War of the Worlds" is a favorite of both children, it is included on Side 2 of Tape 1 (Appendix E).

As a research approach, I believe that this method can reveal much about the nature of a child's response, providing he participates willingly. It would be worthwhile to obtain responses to music that the child chooses. The relatively unstructured approach which I used elicited free responses another possibility would be to approach young listeners with a set of specific questions designed to tap the presence of overexcitabilities. One could also choose music and design questions to bring out the various aspects of the musical response.

Suggestions for Future Research

In Chapter One it was noted that a number of prominent psychologists and music educators have expressed concern about how the quantitative, experimental research designs which have been used in music research have led to a concern for those small parts of behavior which fit those research designs. These writers recognize the need for new research models--"molar methodologies" which will allow us to explore the nature of experience when children and adults interact with music. In this chapter I have attempted to provide some concrete examples of possible research approaches as well as how results would be interpreted within the conceptual framework which has been developed in this study. There are many questions which could be used as the basis for research. Suggestions emerging from this chapter are listed below:

1. To what extent do the five forms of overexcitability provide a useful basis for investigating the musical responses of school age children and for approaching the problem of individual differences?
2. Is there a relationship between musical background and musicality as defined in this study?
3. Is there a relationship between musicality in the restricted sense and musicality as defined in this study? Are people with higher aptitudes (as measured by aptitude tests) and who have an intellectual awareness of musical structure more responsive to music? (This study implies that this is not necessarily true)
4. What is the effect, on different listeners, of teaching them to focus their attention on the structural aspects of music?
5. Is there a relationship between predominating modes of perception (overexcitabilities) and musical preferences?
6. What is the nature of musicality at the different developmental levels described by Dabrowski?
7. How do musical preferences differ at the various developmental levels?

CHAPTER X

SUMMARY AND DISCUSSION

The two basic purposes of this study were: (1) to provide a broad concept of musicality and (2) to demonstrate the value of Dabrowski's theory for investigating the nature of musicality. The broad concept which has been developed construes musicality as a part of the general human endowment--as a fundamental element in human personality. Musical responsiveness depends upon the psychological characteristics of the person. The nature of the response depends upon both the qualities of the perceiver and the qualities of the music. The five forms of overexcitability were used for exploring the basic dimensions of musicality and Dabrowski's developmental framework was used for conceptualizing growth in musicality. The broad concept was contrasted with what was identified as the restricted concept of musicality. These two concepts are not mutually exclusive, but they lead to different implications. Musicality, as broadly defined in this study, provides a different image of developmental virtue. Emotional differentiation and growth underlie the development of musicality.

In my view, Dabrowski's theory has been very valuable as a framework for investigating the nature of musical responsiveness. Chapter One began with a quotation by Roger Brown in which he implied that his own musical development really began to accelerate sometime after elementary school. Dabrowski's theory provides the means, not only for investigating the dimensions of musicality, but for conceptualizing the nature of its growth and development during the life-span.

Several issues and implications arise from this study. These are discussed below.

Issues and Implications

In Chapter Seven, which describes the broad concept of musicality, responses were summarized under the headings "basic" and "higher". I used the word "basic" instead of "lower" intentionally, and I stated that these basic responses form a foundation for other, higher responses. It is important to note that the position I have taken regarding this aspect of musicality represents a departure from Dabrowski's theory. His theory is evolutionary. During the development of emotional-cognitive functions and personality, lower levels disintegrate and yield to higher levels. In contrast to this, the musical responses listed as basic (e.g. the ability to perceive tempo; the feeling of movement in music; a basic mood response) do not disappear or disintegrate, but form a foundation for other higher musical responses. However, it is the level of development, as described by Dabrowski, which determines the qualitative nature of the response and the general nature of a person's preferences, in the broad sense of the word.

With regard to musicality and aesthetic sensitivity in general, I think it is useful to make a distinction between Primary Integration during childhood and during adulthood. The young child, although at the level of Primary Integration in terms of personality development, has qualities and characteristics such as openness, emotional sincerity, imagination, and freshness of appreciation, which are generally considered to enhance musical responsiveness. It should also be noted that some children, who are endowed with a strong form of several overexcitabilities, break through the cohesive structure of Primary

Integration very early in life. This leads to a heightened experiencing of events. The adult who is still at the level of Primary Integration has not kept the positive qualities of childhood intact, nor has the individual regained them during development. Such a person is, as William Hague (1976) expresses it, characterized by "a lack of sensitivity and empathy and blunted perceptions" (p.232). We might say that the positive powers of childhood have been lost, while the egocentricity of childhood remains. Thus a child who is at the level of Primary Integration would be expected to be more responsive to music than the adult who is still at this level.

With regard to the development of musicality, another issue arises. It has to do with the relationship between levels of emotional development and musicality. Within Dabrowski's framework, the higher the level of development, the greater is aesthetic sensitivity. Yet, when we consider a particular art, such as music, we might find it necessary to put some qualifications on this general principle. It appears, to me, that different people are often responsive to different arts. With regard to music, there could be certain factors which prevent a given individual from responding to music. Seashore (1938/1967) provides the extreme example of a man who came from a musical family but was considered to be non-musical. When he was tested, it was found that his hearing was extraordinarily keen--so keen that he heard all the fine acoustic differences in sounds and this prevented him from hearing music normally. His hearing capabilities were much keener than those of his brother, the famous musician. In Seashore's words: "The interesting confession came out that the reason he was not musical was that practically all the music he heard seemed to him so bad that it jarred upon him and was intolerable" (p.4). Another example was given in Chapter Six of the chromesthetic art educator who also had perfect pitch and who was exhausted after attending musical events. This person would undoubtedly derive much more enjoyment from art than from music and her level of aesthetic sensitivity would manifest itself in connection with art rather than music. It appears that these cases exist as exceptions, however.

Let us now consider the reverse situation. It seems to me, that music has the power to move some individuals--in a sense to transform them--so that they have a more profound emotional experience than appears to be typical of them in their relationships with people and in their experiencing of events in general. The coincidence of autism and musicality which was discussed in Chapter Four seems to be an example of an ability to relate to music more than to people. Dabrowski and Piechowski (1977a) discuss the possibility of creative artists sometimes reaching a higher level through their art: "In the creative process, the artist, poet, musician, intuitively rises to this highest level although he, himself, may not have reached it in his own development" (p.203). Dabrowski (Note 2)also refers to "glimpses of higher realities" which some people experience and which remain a dominant influence in spite of continued functioning at lower levels (p.15). It seems possible that just as artists sometimes intuitively rise to higher levels through their creative activities, that some individuals might rise to higher levels through listening to certain music. In other words some compositions may offer "glimpses of higher realities" to some listeners.

With regard to education, this study questions an assumption underlying some of our educational practices in music. It is the assumption that musical responsiveness is based on accurate perception and conceptual understanding of the structural qualities of music. Some educators stress only perception and others believe that both perception and a conceptual grasp of the music are necessary. As I stated in Chapter One, the notion that an individual can not respond to something unless it is first perceived seems logical. However, as I stated at the end of Chapter Four, the exphasis on the so-called "musical" response based on an accurate perception of musical elements does not account for the many ardent music lovers who are highly responsive to music but who have never learned to analyze its structure. At this point, several possibilities present themselves. One is that these music lovers are capable of perceiving the structural events in music, but lack the verbal labels to describe them. Another possibility is that it is not necessary to perceive music in such detail. Gestalt psychologists emphasize the importance of overall configuration in perception. At least one cognitive psychologist, David La Berge (1981) draws attention to what he calls the "global features" or larger units in the music. His research is concerned with motor skills and performance. He suggests that superior performers have more highly developed or larger "cognitive schema" for performance skills. He believes that the "life" in the music resides in these larger patterns or global features. If we extend this idea to the act of listening, we might expect that an overemphasis on detail might, for some listeners especially, destroy the perception of these more global features of the music. The effectiveness of such a procedure would depend upon the nature of the individual listener as well as upon the extent to which this kind of listening becomes automatic and is re-integrated into a more holistic kind of listening. In Chapter Three, another cognitive psychologist, Jane Siegel, was quoted as saying: " When I discuss the psychoacoustic approach with musicians, I am usually left with the impression that it does not address very well their perceptual experience". She believes the psychoacoustic approach is too "reductionistic". We could extend this question and ask, "How well does the perceptual experience of the musician address the experience of the non-musician?" In other words, is the approach of the musician to music listening too "reductionistic" for the listener who is not a musician? Because of the wide range of individual differences in the ability of people to perceive music in this way, one writer, Sidnell (1981) raises a question about our educational approaches. He states that "we must consider the mental capacity of children to deal with the many variables... found in the music stimuli we ask children to respond to" (p.175). He goes on to say that following the Ann Arbor Symposium, America's schools will be thinking seriously about the "musical perceptual and processing abilities of school aged youth". He adds:

> Some cannot handle our simplest tasks and cleverly disguise their difficulty behind a cloud of disdain. I am convinced those who can't handle certain music perceptual problems consider themselves subnormal and find solace in peculiar kinds of group behavior...For years we have talked about individualizing instruction. Is there nothing new on this topic? (p.176)

This brings us to a third possibility. The concept of musicality which has been developed in this study is based not on one way of perceiving, but on five modes of perception. Each mode can be regarded as a two-way channel for perceiving and responding. Each represents one way of processing experience. Although music always involves the sensual mode (the auditory sense), the activity of the other four modes will help to determine the nature of the experience. Some aspects of music--the non-material or expressive aspects--are perceived in an emotional-intuitive manner. We can "understand" emotionally as well as intellectually. This concept of musicality implies that there is more than one "route" to musical responsiveness. It also highlights the importance of the emotional component and implies that musicality can continue to develop throughout the life-span.

With regard to musical education there are those who believe that we must stress the structural (objective) qualities of music--that which is available to sensory cognition. At least one psychologist has questioned this belief. Speaking at the Ann Arbor Symposium, William Kessen (1981) had this to say:

> Only physicists *talk* about volume; only grammarians and linguists *talk* about language; only music educators and musicians *talk* about music. Why do we need to teach children the vocabulary and syntax of music? It seems to me that one of our legitimate goals, for people who are going to be citizens and not musicians, is rather to teach them tuned sensitivity...That seems to be, even in this culture, an achievable goal. Perhaps our first step in this conference is not really an intellectual one, but a moral one--what do we want the children to know? (p.61)

One thing seems clear. If we do teach children, who are not going to be musicians, the vocabulary and syntax of music, we must also find ways to help them "transcend the syntactical". The composer Aaron Copland (1961) compares the professional musician as listener to the amateur listener. He states that the professional musician is an initiate."He possesses a dual awareness". He adds:

> Mere professionalism, however, is not a guarantee of intelligent listening...is no guarantee of instinct in judgement. The sensitive amateur, just because he lacks the prejudices and preconceptions of the professional musician, is sometimes a surer guide to the quality of music. The ideal listener, it seems to me, would combine the preparation of the trained professional with the innocence of the intuitive amateur. (p.9)

Copland refers to a dual awareness and to the ideal of combining professional training with intuitive perception. Maslow (1966) refers to self-actualized people, who retain an "experiential naivete" or ability to see freshly as a child sees, and yet have the ability to transform abstract knowledge into a richer experiencing. He believes this ability to use knowledge to make perceiving richer and more complex is a mystery and "obviously a rich question for research". He states that "The broader research questions are: when does knowledge conceal and when does it reveal?" (p.64). This is a basic question for future research in musicality.

Perhaps the most fundamental implication of the present study is that both research and teaching of the future must be multilevel. It must take into account the multilevel nature of both human beings and music. In this thesis, I have developed a conceptual orientation which can be used to view some of the issues involved in attempting to understand musicality and in attempting to discern growth in musical responsiveness. I have suggested several methods for approaching the future study of musicality. Finally, I have identified a problem--a paradox--that confronts us in our attempts to deal with musical experience: it is the paradox of living with the compartmentalization of our learned structures and our global visions. The developmental ideal, in Dabrowski's terms, would be to achieve a higher integration. The educational challenge is to strive for a measure of integration during each step of the educational process. How we do this may be different for different children.

Concluding Statement

Dabrowski, in his theory, attempts to show that human development can be more readily understood on a macroscopic scale and I have used his framework to demonstrate how we might understand musicality on a more macroscopic (human) level. However, as Dabrowski points out, "It is not our intention to unravel the intricacies of the human psyche in all their fascinating and bewildering detail". (Dabrowski & Piechowski, 1972, p.4). Dobzhansky (1962) has written that "Man is the most mysterious of all experiences. This is why art and science strive to make him comprehensible" (p.XI). Many writers hold the same opinion about music. For example, Lewis Thomas (1981) writes: "If you are looking about for really profound mysteries...I suggest starting with music" (p.47). He points out that we do not really know what music is, why we make it, and why we cannot be human without it. Other writers remind us that the origin of music is a mystery. The fact that we have not unravelled all the mysteries of music is often thought to be part of the reason for the charm, the appeal, and the power of music.

However, in spite of our recognition that we cannot unravel all the intricacies of the human psyche or all the intricacies of music, we continue to strive for understanding. Dabrowski's formulation is a powerful one. Part of the reason for this is his concept of the multilevelness of reality. He believes there is a need for a revision of concepts in psychology because of the more complex and less palpable nature of mental processes as distinguished from processes observable in physical reality. In his book, The Dynamics of Concepts, he argues that because of the dynamic, developmental and multilevel nature of distinctly human phenomena, there is a need to develop concepts which are dynamic and developmental. The psychological transformations which occur during development require that we acknowledge differences between primitive and refined forms of all mental functions. Static, unilevel concepts cannot reveal the plasticity and richness of development and the differences in mental functions at lower and higher levels. He states that there is a need for a "dynamization" of concepts: "New, and richer concepts must be worked out in order to adequately express new cognitive and affective qualities of a growing personality"(Dabrowski, 1973, p. XV). In this study, I have developed a concept of musicality which reflects the difference in the quality of experience at different levels of reality. It is a dynamic concept of musicality.

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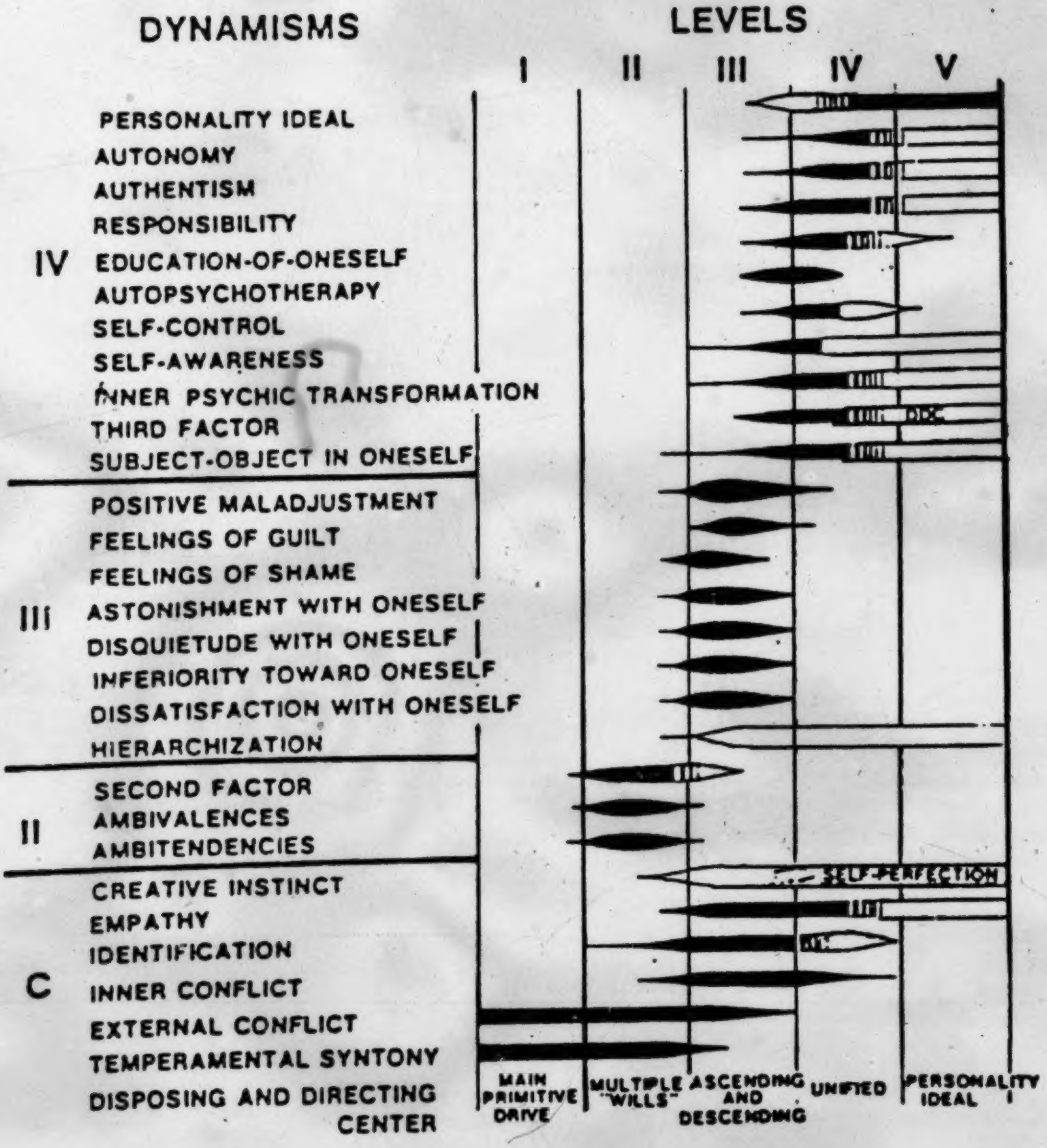
APPENDICES

APPENDIX A

The Constellation of Dynamisms at Each Level of Emotional Development

A Theoretical Pattern of the Constellation of Dynamisms at Each Level of Emotional Development[1]


DYNAMISMS
LEVELS
I
II
III
IV
V
IV
PERSONALITY IDEAL
AUTONOMY
AUTHENTISM
RESPONSIBILITY
EDUCATION-OF-ONESELF
AUTOPSYCHOTHERAPY
SELF-CONTROL
SELF-AWARENESS
INNER PSYCHIC TRANSFORMATION
THIRD FACTOR
SUBJECT-OBJECT IN ONESELF
III
POSITIVE MALADJUSTMENT
FEELINGS OF GUILT
FEELINGS OF SHAME
ASTONISHMENT WITH ONESELF
DISQUIETUDE WITH ONESELF
INFERIORITY TOWARD ONESELF
DISSATISFACTION WITH ONESELF
HIERARCHIZATION
II
SECOND FACTOR
AMBIVALENCES
AMBITENDENCIES
C
CREATIVE INSTINCT
EMPATHY
IDENTIFICATION
INNER CONFLICT
EXTERNAL CONFLICT
TEMPERAMENTAL SYNTONY
DISPOSING AND DIRECTING CENTER
SELF-PERFECTION
MAIN PRIMITIVE DRIVE
MULTIPLE "WILLS"
ASCENDING AND DESCENDING
UNIFIED
PERSONALITY IDEAL

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[1] Taken from Piechowski, 1975.

Note:

1. Roman numerals refer to levels.

2. C refers to dynamisms which are active over several levels of development.

3. Dark shading indicates the amount of tension in the operation of a dynamism. Tension decreases toward higher levels of development except in the case of Personality Ideal which increases in significance at higher levels.

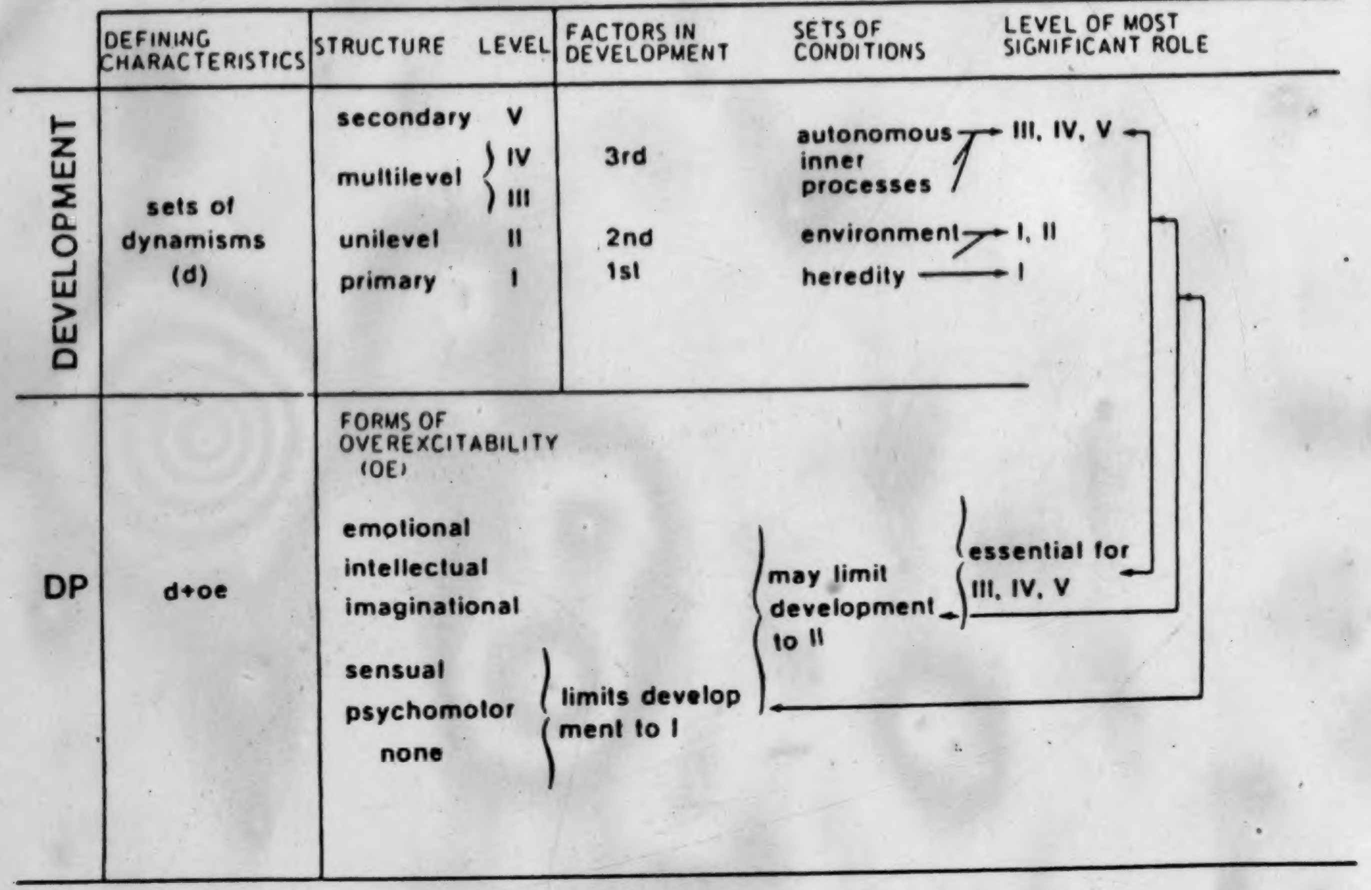
4. Spindle shapes indicate appearance and disappearance of a given dynamism.

5. At the interface of levels, the lower level dynamisms exist together with the emergent dynamisms of a higher level. However, multilevel dynamisms do not appear to be derived from the transformation of lower ones but rather they emerge as new and distinct dispositions.

APPENDIX B

The Conceptual Structure of the Theory of Positive Disintegration

THE CONCEPTUAL STRUCTURE OF THE THEORY OF POSITIVE DISINTEGRATION


DEFINING CHARACTERISTICS
STRUCTURE
LEVEL
FACTORS IN DEVELOPMENT
SETS OF CONDITIONS
LEVEL OF MOST SIGNIFICANT ROLE
DEVELOPMENT
sets of dynamisms (d)
secondary
V
multilevel
IV
III
unilevel
II
primary
I
3rd
2nd
1st
autonomous inner processes
III, IV, V
environment
I, II
heredity
I
DP
d+oe
FORMS OF OVEREXCITABILITY (OE)
emotional
intellectual
imaginational
sensual
psychomotor
none
limits development to I
may limit development to II
essential for III, IV, V

Note: Taken from Piechowski, 1975.
DP refers to developmental potential.

APPENDIX C

A List of Mental Functions

A LIST OF MENTAL FUNCTIONS[1]

Dabrowski discusses the following mental functions at each level of development:

Developmental Gradients

- Gradient of Hierarchicization
- Gradient of Inhibition
- Gradient of Reflection
- Gradient of Syntony and Empathy

Basic Emotional and Instinctive States

- Excitation
- Inhibition
- Suggestibility
- Pleasure
- Displeasure
- Joy
- Sadness
- Laughter
- Crying
- Anger
- Fear and Anxiety

Complex Emotional Functions

- Enthusiasm
- Frustration
- Affective Memory
- Emotional Ties
- Solitude
- Attitude Toward Death
- Suicide

Self-Oriented Functions

- Selfishness
- Self-Preservation
- Courage
- Pride and Dignity

Emotional-Cognitive Functions

- Reality Function
- Success
- Ideal
- Justice
- Immortality
- Religious Attitude and Experience
- Aesthetic Attitude and Experience

Cognitive Functions

- Cognition
- Intuition
- Criticism
- Uncertainty
- Awareness

Imaginational Functions

- Reverie (Daydreaming)
- Magic

Four So-Called Pathological Syndromes

- Nervousness
- Psychoneurosis
- Infantilism
- Regression

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[1] This list is taken from Dabrowski (1974).

Other-Oriented Functions

- Altruism
- Sincerity
- Humility
- Responsibility

Social and Biological Functions

- Social Behavior
- Adjustment
- Inferiority Toward Others
- Rivalry
- Agression
- Sexual Behavior

APPENDIX D

Music Questionnaire

MUSIC QUESTIONNAIRE FOR ______________________(Course)

A. Name ______________________________ Year ____________

Edmonton Address: ______________________ Phone No. ________

I. D. __________________________ Major ____________

B. Place a check ( ) beside courses you have taken and circle (o) those you are taking this term.

Jr. Music Methods
Sr. Music Methods
Music 201
Music 204
Music 205
Music 206
Music 207
Music 210
Music 214
Music 216
Music 250
Music 302
Music 305
Music 307
Music 311

Other music courses: ____

C. What music activities did you have in elementary school?

___Unison singing
___Part singing
___Flutophone
___Autoharp
___Listening
___Composing
___Recorder
___Band/Orchestra
___Rhythm Band
___Tonette
___Melodica
___Ukulele

Other ____

D. Circle each high school grade in which you were enrolled in music classes.

7 8 9 10 11 12

E. What music study have you done with a private teacher?

Subject	Length of Study	Institution	Grade Passed

F. Have you any experience with any musical instrument not mentioned? (e.g., some self-taught guitar). Give details.

____

____

G. Describe your experience as a performer or director in community, church, or playground activities related to music, drama or other entertainment.

____

____

APPENDIX E

Cassette Tape 1: Music Used for Empirical Research

CASSETTE TAPE I

This tape contains the music used for research for all listeners described in Chapter Nine except for Listener 13, who listened to music of her own choice. The tape contains the following music:

Side 1

1.	"The Swan" from Carnival of the Animals by Saint Saens	(000 - 029)
2.	"Trepak" from Nutcracker Suite Op. 71a by Tchaikovsky	(031 - 042)
3.	"Unsquare Dance" from the album "Time Further Out" by the Dave Brubeck Quartet	(044 - 066)
4.	"Carmen Fantasy" by Bizet-Sarasate (an excerpt)	(067 - 097)
5.	"God Bless the Child" by Blood Sweat and Tears (an excerpt)	(098 - 137)
6.	"Two Rapid Formations" from the album "Music for Films" by Brian Eno	(138 - 180)
7.	"Hope You're Feeling Better" on the album "Santana Abraxis" by Santana	(184 - 220)

Side 2

1.	"Dance of the Mirlitons" from Nutcracker Suite Op. 71a by Tchaikovsky (This music was used for Listener 14)	(000 - 028)
2.	"War of the Worlds" a musical version by Jeff Wayne. (An excerpt from Side One of Record One)	(030 - 085)

APPENDIX F

Cassette Tape 2: Music Submitted by Listener 13

CASSETTE TAPE 2

This tape contains the music selected and submitted by Listener 13. The music she loves is recorded on Side 1. The music she does not like is recorded on Side 2.

Side 1

1.	Frank Mills: "Sunday Morning Suite"	(002 - 059)
2.	Burton Cummings: "I Will Play a Rhapsody"	(060 - 102)
3.	Bedrick Smetana: "The Moldau"	(102 - 127)
4.	Ludwig Van Beethoven: "Symphony No. 5 in C Op. 67 (allegro con brio)	(128 - 164)
5.	Jan and Dean: "Surf City"	(164 - 201)
6.	Simon and Garfunkel: "Bridge Over Troubled Water"	(202 - 279)
7.	Elton John: Variation on "Friends"	(280 - 299)
8.	Beethoven: Sonata No. 14--"Moonlight Sonata"	(300 - 413)
9.	Eagles: "The Long Run"	(414 - 495)

Side 2

1.	Warren Zevon: "Werewolfs of London"	(001 - 041)
2.	Igor Stravinsky: "The Rite of Spring"	(042 - 071)